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ORIGINAL ARTICLES.

THE RELATION OF THE OCULAR NERVES TO THE BRAIN.*

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The course which the ocular nerves take from the brain to the muscles of the eyeball is a very long one, and the number of structures they pass is quite large. Therefore it will be necessary, in order to obtain clearness, to divide them into different sections, of which the division into the *orbital* and *intra-cranial* portions will be the chief one. From the supra-orbital fissure the nerves run along the base of the brain until they reach the brain itself, spreading into the root fibres which end in the ganglia cells of the nuclei, and these are connected by fibres with the cortical centres. Speaking of an ocular palsy, exclusive of diseases of the muscular substance, we have, according to the lesions of the nerve in its different portions, an *intra-cranial*, *orbital*, or *peripheral* paralysis. The *intra-cranial*, is either *basal* or *cerebral*, and the latter may be either *cortical*, *nuclear* or *fascicular*. (Mauthner, *die ursæchl. Mom. der Aug. musk—Læhmungen*). By *fascicular* are meant those palsies affecting the fibres between the cortical centers and nucleus or the root fibres, from which the nerve arises, namely, the fibres between nucleus and nerve trunk. Recken (*Klin. M. f. A.*, 1891, p. 349) divides the ocular palsies into *central* and *peripheral*, according to the degenerative reaction which is missing in the first case. Then a central lesion would compress only the cortical and fascicular between cortex and nucleus, all the rest would be peripheral. After we have ascertained the site of the lesion, we have to find out the nature of it, whether it is due to an inflammatory process, to a degeneration, a separation, or a compression caused by a morbid process, which may be a tumor, produced by a neoplasm, an aneurism, an accumulation of blood from a hemorrhage, an abscess, a meningeal exudation, or to retracting connective tissue pulling or strangulating the nervous elements. Finally, if the cause of the morbid condition creating paralysis of the nerve is determined, for instance, if we know that it is a tumor of syphilitic origin, the diagnosis will be complete. How far we are able to arrive at this our aim may be illustrated by statistics of Leibrecht from Shœler's clinic in Berlin (*C. Bl. f. p. A.*, 1891, p. 371): Among 25,000 eye patients, 312 cases of ocular palsies were observed. Seventy of these were under sufficiently long treatment for the collection of careful records, but despite thorough examination by neurologists and long continued observations, the etiology could be elucidated only in 64 per cent. Thirty-six per cent., that is one-third, remained unexplained. Hutchinson has reintroduced the term *ophthalmoplegia*, used by Von Græfe in 1869, and calls it internal, if all the muscular structures are within the globe, and external, if all or the most muscles moving the eye ball are paralyzed. Mauthner

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changed them into the words *interior* and *exterior*, in order to avoid confusion with paralysis of the internal or external recti, and uses ophthalmoplegia, if muscles of one eye, supplied by different nerves, or if muscles of both eyes are paralyzed.

In searching for the site of the lesion, we must study the cerebral origin of the ocular nerves, especially the location of the *nuclei*. The nucleus of the third nerve, being the most complicated, has been investigated with particular care in the last few years. In 1878, Hensen and Voelckers (*v. Graefe's Arch.* 24, 1, p. I.) found, by stimulating different parts of the brain of dogs with the faradic current, that the nucleus of the third nerve occupies the posterior portion of the floor of the third ventricle, commencing above the mamillary bodies and the floor of the aqueductus Sylvii, to the region of the posterior corpora quadrigemina. The most anterior—the nucleus of the ciliary muscle followed by that of the sphincter pupillæ, lies on the floor of the third ventricle above the mamillary bodies. At the border of third ventricle and aqueduct, below the posterior commissure, are the centers of the rectus internus; on the floor of the aqueduct those of the rectus superior and levator; below the anterior pair of the corpora quadrigemina that of the rectus inferior, and below the posterior pair that of the inferior oblique. They state, however, that the position of the three latter is not absolutely certain, on account of the possible errors arising from the insufficient isolation of the faradic current they used in their experiments. In 1881, Kahler and Pick (*Prag. Z. f. h.* 11. 4., p. 301), from two pathological anatomical investigations observed the same in regard to the interior muscles of the globe, namely, that their nerves originate from the most anterior root fibres of the oculo-motor nerve, but in regard to the exterior muscles, they found in a case of paralysis of levator, rectus superior and inferior oblique, the lateral bunch of the posterior root fibres damaged, the medial intact, which reversely, in another case of paralysis of the internal rectus, was degenerated. They located the root fibres of the rectus inferior also in this medial portion. Starr (*Jrl. of Nervous and Ment. Dis.*, 1888) adopted the same scheme after an analysis of twenty cases. In 1882 and 1883, vonGudden investigated the nucleus of the third nerve in rabbits with his degeneration experiments. After removal of the corresponding muscles of the eye and tracing the secondary degeneration of the nerve to its centers, he discovered that each third nerve has two nuclei, a ventral and a dorsal; the former, consisting of two clusters, is the origin of the nerve of the same side, the latter supplies the opposite nerve with crossed fibres. Edinger, Westphal, Darkschewitsch and others worked on the same subject, but the most detailed description was given by Perlia (*v. Graefe's Arch.*, 35, 4) in 1889. He formulated an anatomical picture of the oculo-motor nucleus by numerous sections of the fetal and adult human brain in frontal, sagittal and horizontal directions. It has the shape almost of a triangle of broad base, with the greatest sagittal diameter of about ten m. m., and is divided into a larger posterior and a smaller anterior portion. The chief group contains four pairs of lateral large-celled nuclei, a single large-celled central and one pair of the small-celled nuclei of Edinger-Westphal. The anterior portion consists of a lateral and a medial cluster, so that all together eight nuclei form the center of the third nerve. He found crossing of the root fibres only of nucleus five and of the fourth nerve, so that Knies takes this as the center of the inferior oblique, which acts in the same sense with the obliquus superior of the other eye.

Pflueger (*v. Græfe's Arch.* 36, 4,) adopts this view of Knies in explaining a nuclear palsy of both obliqui superiores and the right obliquus inferior. Although Perlia thinks that we have not succeeded as yet in proving with certainty by pathological anatomical investigations the connection between any branch of the oculo-motor nerve and its nucleus, Knies (*Arch. f. Augenh*, 1891, 23, p. 45) believes that it can be done with a good deal of certainty by aid of the schemes arrived at by Hensen and Vœlckers, Kahler and Pick, and Starr, but he places the nucleus of the sphincter before that of the ciliary muscle. Perlia advocates, however, the assumption that the posterior longitudinal fascicule connecting the oculo-motor center with the medulla oblongata, forms a connecting link between the nuclei of the third, fourth and

sixth nerves. He detected another system of nervous fibres reaching the oculo-motor center from above and joining it with the reticular substance of the foot of the peduncle, the function of which is not known yet. Perhaps the cortical fibres of the third nerve originate from them according to Obersteiner (*Anleitung, etc.*, 1892, p. 376). The larger portion of the root fibres runs in a lateral direction to the posterior longitudinal fascicles, forming thicker branches beyond them; the remaining ones, mostly from the dorsal nucleus, run downwards to the median line, in which they cross to the other side. Siemerling (*Chron. progr. Læhmung der Aug. musk.* 1891), who examined microscopically the nuclei of the ocular nerves in eight cases, which had been observed very closely clinically, could not decide the question in regard to the crossing of the root fibres and the function of the lateral and medial groups. But he places with some probability the center of accommodation and iris in the anterior, and those of the muscles raising the eye-ball in the posterior lateral nuclei. As a new discovery he describes a congeries of ganglia cells in the posterior longitudinal fascicle on the level of the nucleus of the fourth nerve, which he always found intact when ptosis was absent, so that it probably presents the center of the levator. Mendel (*Berl. Klin. W.* 1887 p. 913) localized the center of the upper, or so-called ocular facial nerve, in rabbits and guinea-pigs in the posterior portion of the oculo-motor nucleus. He removed the frontal muscle and the upper and lower lid, in order to destroy the orbicularis completely, and found later atrophy of the posterior portion of the oculo-motor center, but the facial nucleus in the medulla intact. He concludes that the fibres of this nucleus, representing the ocular portion of the facial nerve, run in the posterior longitudinal fasciculi to the nucleus of the facial nerves and unite with peripheral fibres, recognizing in this arrangement an analogy with the spinal nerves noticed in poliomyelitis, that in the center fibres of muscles of associated function, are united fibres terminating in entirely different peripheral nerves, so that in man perhaps the same formation of the facial nerve exists.

This theory would easily explain the fact that in bulbar palsy only the lower fascial branches participate, since the bulbar palsy does not extend so far upward as to reach the nucleus of the oculo-motor and, consequently, of the upper fascial nerve. Birdsall (*Jrl. of Nerv. and Ment. Dis.*) observed a case of ophthalmoplegia exterior with paralysis of the muscles supplied by the third nerve, in which the excitability of the orbicularis and frontal muscles was impaired. This would also correspond to Mendel's hypothesis for the human brain, but the proof by a post-mortem examination was wanting.

The origin of the fourth nerve is close behind the oculo-motor center, and, in frontal sections, below the anterior portion of the posterior part of the corporo-quadrigemina. The root fibres run backwards to the anterior velum medullare, where most of them cross to the other side. The nucleus communicates with the brain by the raphe, with the anterior corpora quadrigemina and the posterior longitudinal fascicle. In Siemerling's (*C. Bl. f. A.* 1891, p. 247) opinion it is not a continuation of the oculo-motor center, at least not as was generally accepted so far.

The nucleus of the sixth nerve lies in the dorsal region of the tegmentum next to the facial knee, and contains large star-shaped cells from which the root fibres develop at its lateral portion, run in a dorsal direction in circles and pass through the region of the tegmentum. A part of them take a median course and cross. The fibræ arcuatæ connect it with the brain, crossing in the raphe, and go in a vertical course to the pyramidal tracts. Other fibres communicate by the posterior longitudinal fascicles with the oculo-motor center.

The results of the latest researches on the nuclei of the ocular nerves are given in some detail, as of the cerebral palsies the nuclear is the most important. According to Mauthner the progressive paralysis of the ocular muscles in most cases is caused by a nuclear lesion. Ophthalmoplegia exterior must be nuclear under all circumstances (if not orbital). Therefore the integrity of the interior muscles of the eyeball is a very valuable symptom in the diagnosis of nuclear paralysis. This can happen only if the lesion attacks the branches of the third nerve at a place where they are separated, and that is in the nuclei. The explanation of this peculiar fact, that in such a

small range as the center of the oculo-motor nerve some nuclei should be diseased, the others not, was given by Heubner, (*C. Bl. f. d. med. W. S.* No. 52, 1872). He proved that at the base of the brain the small arteries form no anastomoses and are terminal vessels supplying a very limited portion of the brain substance.

The ramus communicans posterior supplies only the nuclei of the sphincter iridis and ciliary muscle, so that the arterial area of these is perfectly isolated from the other oculo-motor centers. Therefore ophthalmoplegia interior must be nuclear too. But clinical experience has shown that both forms may occur—simultaneously or one after the other, and that nuclei of other cranial nerves may be involved if the morbid process, affecting at first only a small portion of the gray substance in the walls of the third ventricle, extends forwards or backwards. In this way a disease of the nuclei of the exterior muscles may reach the optico-pupillary center in the walls of the third ventricle and abolish the reaction of the pupil to light, without damaging the center of the sphincter, or that of accommodation. Or the center of the sphincter may be destroyed with immobility of the pupils, but the accommodation be preserved. Or the latter may be reached also, so that we have a total paralysis of the third nerve. Then the nuclear lesion has to be diagnosticated from the complications. In other cases the degeneration starting from the most anterior nucleus, being that of accommodation, and traveling downwards, may involve the centers of all the following cranial nerves and finally reach the anterior (motor) cornua of the spinal cord, resulting in progressive muscular atrophy. Another form of nuclear palsy is uncomplicated paralysis of the oculo-motor nerve with myosis described by Fontan (*Mauthner* l. c.) in a case of nicotin intoxication, the nicotin paralyzing the nuclei of the exterior and at the same time irritating the nuclei of the interior muscles.

Paralysis of the third nerve with simultaneous maximal dilation of the pupil may be due to basal or nuclear lesion, by paralyzing the oculo-motor nerve and irritating the more resistant sympathetic fibres by compression, either at the superior orbital fissure or in the walls of the third ventricle, the irritation of which caused mydriasis in the experiments of Hensen and Voelckers.

Although anatomical researches in regard to the ocular nuclei have proven a partial crossing of their fibres, so that a unilateral nuclear paralysis would not be very probable, Mauthner infers from clinical observations that the ocular nerves of each eye have all their nuclei on the same side, and that moncular total ophthalmoplegia is caused by a successive disease of the nuclei of the same side, as in the scheme of Kahler and Pick. Eissen (*Kl. M. f. A.* 1890, p. 277) supports this assumption in opposition to Boettiger (*Arch. f. Psych.* 1889). An isolated or partial palsy of any ocular muscle, as observed in locomotor ataxia, disseminated sclerosis and progressive paralysis of the insane, are nuclear. They may be very slight and transient, and, as for instance, mydriasis may be the precursor of these diseases for many years.

The nuclear character of isolated palsies of the exterior muscles may sometimes be determined from the accompanying symptoms. In diabetes they are probably caused by hemorrhages in the nuclear region. Somnolence is another important symptom of nuclear palsy. Mauthner (*Wein. med. w.* 1891, No. 26 and 27) places the seat of sleep in the gray matter surrounding the central ventricle, in the upper region of which the nuclei of the third nerve are situated, and describes ptosis and paralysis of the internal rectus as the focal symptoms of sleep. Headache and pain in the eye may be present or absent in nuclear palsy. Wernicke and Mobius (*Berl. K. W.* 1884, No. 38) attribute it to irritation of the descending root of the fifth nerve which contains the sensitive fibres of the eye and the dura mater. The manner in which the paresis sets in is characteristic for a nuclear lesion. Before it is complete, the movements are slow, as if in wax, and the palsy can be overcome by an energetic mental effort; or it changes in the course of a day, the ptosis, for instance, is less marked in the morning than at night. This shows clearly the origin in the nuclear cells; if not entirely destroyed, they can be influenced by an impulse, which would be impossible if it were in the nerve itself and the conduction interrupted. The nuclear palsies are not associated as

nuclear paralysis of both abducentes was observed. If they last for a time, no double images are complained of. Very different morbid processes may cause nuclear paralysis. Congenital ptosis, for instance, with functional impairment of rectus superior and obliquus inferior is due to a malformation in the nucleus (*Mauthner* p. 377), traumatic hemorrhages into the nuclei, tubercles and compression of the medulla oblongata and of some ocular centers by caries and tumors of the vertebræ. The most common causes are ependymitis, with secondary sclerosis extending into the gray substance around the ventricles, multiple sclerosis and atrophy of the ganglia cells. The nuclear ophthalmoplegia may be congenital or acquired in the first years after birth without any other disturbances, or it may develop in adults and remain stationary without other cerebral symptoms. But it may be complicated with headache, paralysis of other cranial nerves, bulbar palsy, locomotor ataxia, progressive muscular paralysis and mental diseases. In cases of acute or sub-acute development it may be fatal by its complications, or heal and recur, or remain stationary.

Our knowledge of the cortical lesions of the ocular muscles is still very limited, since the cortical centres are not explored beyond doubt. What we know of them is mostly obtained from experiments on animals, consisting in the stimulation of the cortex by faradic currents. Hitzig placed the cortical center of the ocular muscles in the frontal lobe, Hensen and Voelckers in the temporal, Ferrier in the angular gyrus and Munk in the occipital lobe.

Recent experiments of Munk (*C. Bl. f. A.* 1890, p. 149) on dogs confirmed Schæfer's investigations on monkeys, that stimulation of the visual center with weak faradic currents elicits associated ocular movements of the opposite side, the eyes turning downward if the anterior, and upward if the posterior area of the visual sphere is stimulated. Ocular movements never occured if a spot outside the visual sphere was irritated. Munk explains these facts by the supposition that the fixation of the eyes is instituted by perceptions of light, by which stimulation of the radiant fibres of the corona ciliaris is propagated to subcortical portions of the brain. These fibres govern the involuntary movements of the eyes which we perform in order to find the right fixation of objects we noticed only indistinctly before, and are to be considered as congenital reflexes, as the lowest visual reflexes are dependent upon perception of light, not on visual impression. They are a great help for the quick and reliable preception of the visual field. The fibres of association which connect the visual spheres with the cortical motor centers of the ocular movements, govern the higher visual reflexes. Knies, (*l. c.* p. 24.) assumes two different cortical spheres for the voluntary innervations of the ocular muscles. *First*, the visual sphere for the voluntary movements of the eye, convergence and accomodation, and *second*, the so-called motor cortical region of the levator. He acknowledges the involuntary character of the ocular movements obtained by Schaefer and Munk, but they run in the same tracts in which the voluntary impulses to ocular movements are physiologically conducted to the muscular nuclei. All voluntary ocular movements starting from the visual cortex are conjugate and tend to binocular fixation. The visual cortical center of each side governs chiefly the voluntary conjugate movements of the eyes to the opposite side. The area of the visual sphere corresponding to the macula is the cortical center of the voluntary convergence and accommodation of a fixed object and it may start innervations for voluntary movements in all directions. Each visual sphere is connected chiefly with the nuclei of the third and fourth nerve of the same, and with that of the sixth nerve of the opposite side. All voluntary ocular movements are conjugate, therefore all disturbances of them are conjugate.

These quotations will sufficiently show how difficult a definite diagnosis of cortical or fascicular paralysis will be, so far as the fibres between cortex and nucleus are concerned. If a paralysis of the exterior muscles supplied by the third nerve is associated with contra-lateral hemiplegia, the lesion must be fascicular and is located in the pedunculus cerebi, in which the exterior fibres coming from their nuclei behind and the interior fascicles from in front are still separated, as proven by two post-mortem examination of Kahler and Pick. If exterior and interior muscles are affected, the focus must be near the

exit of the nerve where they unite, or it may be basal and be caused by two different lesions. Paralysis of the sixth nerve with contra-lateral hemiplegia is due to a focus in the pons. In regard to the differential diagnosis between these three kinds of cerebral palsies from the basal, we have only one symptom which is absolutely certain and that is the integrity of the interior muscles if the exterior are paralyzed. This never happens in basal lesions. The recurrent paralysis of the oculo-motor nerve in most cases is basal. It is characterized by the fact that only one oculo-motor nerve is totally paralyzed, and that each relapse affects always the same nerve, never that of the other side. It heals for awhile, or becomes less in intensity until, after weeks, months, or a year, a new attack occurs, usually commencing with hemicrania and lasting from one day to several weeks or months. It is always acquired in infancy, most likely by an injury of the base of the skull from a trauma of the head, happening so often in children, and subsequently gradually developing pachy—or lepto-meningitis near the trunk of the oculo-motor nerve. The relapses are explained by transient increased hyperaemia (for instance, in females at the time of the menses). Pel (*Berl. K. W.* 1890, 1,) observed a case of recurrent partial paralysis of one third nerve, of nuclear origin proven by the integrity of the interior muscles, in the first stage of locomotor ataxia, relapsing seven times.

The isolated bilateral paralysis of the third nerve may be nuclear, or basal from compression by a tumor or artery at the base, or from meningitis. Both sixth nerves may suffer by a nuclear disease in the fourth ventricle, by a basal affection at the posterior margin of the pons, or by symmetrical compression in the cavernous sinus by tumors from increased intracranial pressure. Affection of both fourth nerves may be in the anterior velum medullare and therefore fascicular, or it may be nuclear, as Pflueger observed in a case.

Sometimes it is very difficult to differentiate a nuclear from a basal unilateral multiple paralysis of cranial nerves, and then the condition of the olfactory and optic nerves becomes very important. Homonymous hemianopia in such cases may be nuclear or basal, as the lesion may be situated in the thalamus opticus and then be nuclear, or in the tractus opticus and then be basal. Amaurosis of the eye of the same side alone or with temporal hemianopia of the other eye can be only basal. In the first case it can only happen by compression of the optic nerve at the base after it has left the chiasm, and in the second case the optic nerve and tract of the affected side are damaged. The affection of the olfactory nerves in multiple paralysis of cranial nerves shows generally a basal cause, but in nuclear paralysis anosmia may be due to a disease in the bulbus olfactorius.

Nuclear and basal palsies may occur simultaneously from the same cause—for instance by a tumor of one hemisphere paralyzing the anterior cerebral nerves by pressure at the base and by hydrocephalus of the fourth ventricle compressing the nuclei at its floor. Bilateral progressive paralysis of cranial nerves is in most cases nuclear, the diagnosis resting chiefly on the condition of pupil and accommodation. Blindness of both eyes without ophthalmoscopic changes, or with simple atrophy of optic nerves in such bilateral affections, may be nuclear as proven by autopsy, or basal caused by strangulation of retracting tissue from a partial chronic basilar meningitis. The peculiar fact was observed in autopsies, that the nerves at the base, even if apparently destroyed, when perfectly flat by compression or imbeded in inflammatory growths or tumors, sometimes do not show any degeneration of their fibres, so that their functional disturbance must be explained by an ischemia of the vessels of the nerves.

The causes of basal palsies may be of various kinds (according to Mauthner's synopsis): Hemorrhages; circumscribed pachymeningitis near the nerve trunks; meningitis of the cortex and the base, the latter mostly tubercular in children—therefore in children double vision from paralysis of an ocular muscle gives a very bad prognosis; abscess of the brain, especially of otitic origin; disease of the basal arteries, as aneurism; arteritis obliterans by want of blood supply to the nerves; syphilitic products and neoplasms growing around and into the nerves. The nerves themselves may be the seat of neuritis, of gummous and tubercular interstitial neuritis and perineuritis; lymphomatous swelling in cases of general lymphomatous and gray degeneration following atrophy of the nuclei.

COMMUNICATIONS.

THE TREATMENT OF ACUTE PNEUMONIA WITH ICE AND SUPPORTING MEASURES.*

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Acute pneumonia is a disease which we all recognize. Its symptoms and physical signs, its course and duration, are constant and characteristic; yet, strange to say, its treatment is as variable and vacillating as its death-roll is long and appalling. In the city of Philadelphia alone fifteen hundred lives are annually sacrificed to this disease. Is this frightful mortality inevitable, or is there a way to escape it? I believe that it can be materially lessened, but before this can be done we must realize the shortcomings and the mischievous tendencies of professional thought on this subject at the present day. I believe that the want of uniformity in the therapeutics of this disease is partly traceable to the prevailing but mistaken theory that pneumonia, like measles and smallpox, is a self-limited disease, and therefore beyond the touch of successful active medication. Then again, the general skepticism of this age has invaded the field of therapeutics and has cast a gloom of doubt on the remedial effects of the long-honored articles of our materia medica. Both of these tendencies in connection with the fact, which has been shown over and over again, that the practical results of the let-alone treatment of pneumonia are superior to those which are obtained when the disease receives the active routine treatment of days gone by, have brought the therapeutic art into undeserved discredit, and have sown broadcast a belief that the less active the treatment is to which pneumonia is subjected the better it is for the patient. In accordance with this view the disease pursues its natural course in spite of any treatment, and all that can be done is to stand by and watch and treat any incidental danger which may develop.

What ground is there, then, for believing that the pneumonic processs is self-limited, and that the therapeutic art is powerless in making a local impression on it? So far as I can see, there is no more reason for regarding pneumonia self-limited than there is for considering any other ordinary acute disease in the same light. All diseases of this kind are limited in duration, but there is no inherent limitation, in the same sense as there is in small-pox or measles. Let us say pneumonia suddenly attacks a single lobe of a lung, and in the course of three or four days it suddenly ends in crisis, and every vestige of the disease disappears. Its sudden onset and termination in many instances lead us to infer that pneumonia is due to the absorption and explosion of a specific poison which exhausts its energy in a few days, and to see an analogy between its behavoir and that of smallpox. On the other hand let us suppose another case of pneumonia involving the same lobe of the lung. In about three days the temperature suddenly drops to within a degree of the normal line, and a favorable termination is anxiously looked for, but instead of this, the temperature rises higher, and on physical examination it is now found that the whole of the adjoining lobe is implicated in the process. A similar succession of events may take place in case another lobe or part of a lobe becomes involved. These phenomena are familar to every practitioner, and yet can anyone say this is definite proof of the self-limitation of pneumonia? Has anyone ever heard of smallpox or measles attacking the body by piecemeal, first invading one area, then another, and so on? Is it not more probable that the duration of the pneumonic process is chiefly governed by the length of time which it naturally takes for the fibrinous exudation to undergo fatty degeneration; and that when the fibrinous deposit occurs successively in different lung areas the disease will be more protracted on this account than if it confines itself to the area which became primarily involved?

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Moreover it is my firm conviction that the prevailing impression that the pneumonic process cannot be controlled or restrained by means of active medication, rests on an equally insecure foundation. I am not rash enough, however, to assume that any form of treatment can be devised which will always insure against death from pneumonia, but from recent experience I believe that a mortality of 20 per cent., which is the usual death-rate, is too high, and that this may be materially reduced. I also firmly believe that this reduction in the mortality cannot be brought about exclusively through internal medication, feeding, or stimulation, valuable as these measures are. The profession fully realize the vital importance of sustaining the strength of the patient thoroughout this disease, and practically this part of the treatment is carried out with very desirable results. Far above the efficacy of all these measures, however, stands ice, or ice-cold water—the local application of which has the undoubted power of subduing and of circumventing the inflammatory process in the lung.

I base this favorable opinion on the results which were brought out in my collective report on "Ice in the Treatment of Acute Pneumonia." This paper consists of the condensed histories of fifty cases which were treated locally with ice or cold applications, and which were reported to me by professional friends, or were collected from the literature on the subject, or came under my personal observation. Out of the entire number, two died, making a death-rate of 4 per cent. Additionally I refer to one hundred and six other cases of pneumonia treated in the same way by Dr. Fieandt, a physician of Finland, who had a mortality only of 2.82 per cent.—giving us a death-rate among all of these cases of 3.2 per cent. Moreover, since the appearance of my paper I have succeeded in securing a number of other reports of cases thus treated, which continue to maintain the favorable impression made by the ice treatment in the first report, and which I hope to include in a future contribution on this interesting problem.

Asides from the fact that both of the cases which died among those reported in my list were suffering from probable incurable disease when they were smitten with pneumonia, and were, perhaps, on this account not the most impartial test for any new remedy, it is quite evident that the total showing is still better than appears on the surface. Great weight must, I think, be laid on the fact that these cases emanate from fourteen independent observers, half of which number report only one case each. This excludes largely the existence of a personal factor —an attribute and a power which grows out of accumulated knowledge and experience and gives its possessor a certain advantage over those less equipped in this direction—and goes far to demonstrate that the curative effects of ice applications do not depend on any very special artistic skill of the medical attendant.

I am often asked whether ice is as efficacious in catarrhal as it is in croupous pneumonia. On theoretic grounds one would be led to believe that it is of greater service in the latter than in the former variety, because the whole inflammatory process is more ephemeral and entails less organic change of the lungs in that form. While my first cases in which the ice was used were exclusively those of the croupous variety, my later experience has taught me that this measure has a similar beneficial effect in catarrhal pneumonia, provided it is pursuing an acute course. This is fully demonstrated by a number of the cases contained in my report, notably by some of the cases which were treated by Dr. Lees, and also by the one reported by Dr. Franklin. Indeed, I believe it is impossible sometimes to discriminate between croupous and catarrhal pneumonia during life, when the latter pursues an acute course, and especially when it takes place in infants or small children.

In what special manner should the ice be employed? For want of a better method, the front, side, and back of the affected area are surrounded with rubber bags filled with ice and wrapped in towels. The number of bags which are needed depends on the size of the area which is involved. If this is small only one or two bags are necessary, but in cases where an extensive area is affected I have applied as many as six and seven, which suffice to cover the whole chest. They are allowed to remain until the temperature becomes nearly normal. Very often it is found that the application of the ice to an affected spot is immediately followed by a marked lowering of the temperature,

and improvement in the physical signs in the part. In a very short time, and perhaps in the midst of this amelioration, the temperature rises again, and the patient feels less comfortable than before. Further examination shows that the disease has invaded a new and probably an adjoining territory. Removal of the ice-bags to the fresh spot, or the application of new ones, will again be followed by improvement. This creeping feature of pneumonia must always be borne in mind, and followed up until it ceases.

One difficulty in the use of the ice-bags is to keep them constantly applied to the chest in restless patients, and this has led me to look into the feasibility of making a hollow tin jacket, which adapts itself to the chest, and through which a constant current of ice-cold water may be passed. Such an apparatus I have in contemplation, and when it is perfected I think it will add much to the effectivenesss of the application, and will also be a greater convenience to the patient.

The subject of diet demands the most serious consideration of the practitioner, whose aim should be to administer food of the most nourishing character and in the most concentrated and digestible form. In other words, he should strive to give the stomach as little work to do as possible, and at the same time maintain the nutrition of the patient at the highest point. For this reason two ounces of fresh beef-juice pressed out of round steak should be given alternately every hour and a half or two hours, with eight tablespoonfuls of milk, one of whiskey, and one of lime-water. Beef-powder, and nutrient wine of beef-peptone may also be given.

So far as internal medication is concerned, I would say that strychnine stands first in this respect and should be given unstintedly. Adults should receive $\frac{1}{15}$ or $\frac{1}{10}$ of a grain twice a day hypodermatically, and $\frac{1}{15}$ of a grain by the mouth every four hours, until there is a manifestation of toxic symptoms, such as an increase of the reflexes, especially of the lower extremities. A quarter of a grain of morphine is to be given subcutaneously in the evening to produce sleep. An ice-bag to the head will also help to allay cerebral excitability and restore quiet. Evacuation of the bowels should be secured by the administration of small doses of calomel and sodium bicarbonate.

When cyanosis and difficult respiration become very marked inhalation of oxygen must be employed. The patient may inhale the gas out of an ordinary-sized rubber bag through a suitable mouth-piece which is attached to it. The amount of oxygen which must be given in a case is entirely dependent on the severity of the symptoms, but it is a good rule to push it until the lips and finger-nails assume a more healthy appearance, and the breathing becomes less oppressed, and to give it as often as it is necessary to suppress these symptoms.

Now when we compare the results of the ice treatment of pneumonia with those which are obtained from the prevailing treatment, it will show very much in favor of the former mode of treatment. Thus the mortality of 1012 cases in the Montreal General Hospital was 20 per cent.; while in the Charity Hospital, of New Orleans, it was 20.01 per cent. From 1822 to 1889 the mortality from pneumonia in the Massachusetts General Hospital was 25 per cent. Dr. Hartshorne estimates that the death-rate from this disease in the Pennsylvania Hospital, this city, was about 31 per cent. during the years of 1884, 1885, and 1886. A comparison of this mortality-rate with that which has been derived from the treatment advocated in the present paper, shows that the latter produces results which are at least 75 per cent. better than those which are obtained when the cold applications are not employed. I know that the number of my cases is rather small to draw such promising deductions, but from my experience since they were published I am encouraged to believe that this form of treatment will not only maintain its excellent reputation, but will grow in increased favor on closer acquaintance.

NEWFOUNDLAND dogs are to be employed to rescue the persons who fall or throw themselves into the Seine. The dogs are to be housed upon barges anchored in the river. The skill with which these dogs recognize the falling of persons into the river, and the unerring certainty with which they reach the body by the most direct route and seize it at the proper place and swiftly bring it to the barge or shore, are matters of marvel to all observers.—*American Lancet.*

OPERATIVE PROCEDURES FOR CARCINOMATOUS TUMORS OF THE BREAST.*

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The high estimate placed upon the preservation of the mammary gland is attested by the commendable pride of every fair maiden in the development of this part of her organism and by the practical concern of every mother in the due performance of the function of lactation.

Not only from an esthetic standpoint but from utilitarian considerations, the mammary gland is recognized as entitled to a prominent place in the physical structure of woman, and anything which tends to induce diseases of this organ appeals strongly to the physician and surgeon for relief. It becomes us, therefore, to use all diligence in the prophylactic and curative appliances directed to it.

While the mammary gland is liable to injuries of various kinds and to inflammation in connection with its functions, there is a special proclivity to disorders of a graver character, characterized by developments of a malignant kind in its structures.

The mammary gland is peculiarly constituted in the human female and its anatomical relations to the lymphatics render it more liable to complications with the neighboring ganglia, under inflammatory processes, than occurs in any other part of the organism. There are physiological sympathies of this gland with other viscera which indicate a deep seated and intimate correlation between them, but we are interested now especially in the investigation of the link which binds this structure to the general physical system. The involvement of the mammary gland in carcinoma is most frequently associated with marked impairment of the general health, and earlier or later that condition known as cachexia is developed, so as to become characteristic of the progress of a carcinomatous disorder. There is some plausible ground for doubt as to cause and effect in the local and general manifestations of carcinoma, and hence a question in regard to the circumscribed area of the disease at the outset in the tissue of the mammary gland. It is held by most observers that cancer of the breast is primarily a strictly local trouble and if removed at an early period, must be eradicated. But either the tumor has from the outset a proclivity to reproduction, or comparatively few cases are operated on sufficiently early to arrest their progress, as it is well known that a return of the neoplasm is the most frequent result of operations for the removal of carcinomatous tumors of the breast. This holds in regard to the complete as well as the incomplete mode of operating in these cases, and in those patients, without enlargement or induration of the axillary glands, there does not appear any good and sufficient reason for the invasion of this region by the knife. There are no indications of trouble beyond the limits of the breast and under such circumstances, it must prove very difficult, if not quite impracticable, to identify the lymphatic glands and remove them. If it was simply a matter of indifference as to the effect of this complete operation upon the patient, each operator might cut and slash to his heart's content in the axillary and in the clavicular space, but when it adds to the traumatism in a way to damage the prospects of recovery, it certainly should be reserved for the removal of diseased lymphatics. Even in a case of involvement of the ganglia in the clavicular space, it is problematical whether the shock of enucleating them may not overbalance any advantage which can accrue from their removal.

In the legacy left to the profession by Dr. Douglas Morton, in answer to the question, "How should we operate for mammary cancer and when?," it is held that the "completed operation" is not only far more dangerous than the old one, but in an important sense is still incomplete after all. As it is usually done, the axillary glands and some tissues about them are removed. The intervening lymphatic ducts that may be full of cancer cells,

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especially at their valves, are at best only partially removed; the alveolar buds that shoot out from every gland from the moment it enters the process of becoming fixed are cut or torn through, causing cancer cells to be scattered over the surface of the wound soon to become fixed as new foci. Furthermore the supra- and sub-clavicular glands that in many, perhaps most of the cases, become infected sooner or later, are in the "completed operation" as it is ordinarily done, left intact; even Gross, a most earnest advocate of this operation, removes these glands only when they are palpably enlarged. Butlin calls it a "surgical blunder."

In order to examine systematically the conditions that bear upon "clearing out" the axilla, Dr. Morton claims that all mammary cancer subjects may be divided into four classes. (1) Those in which the disease has not only infected the axillary glands but by metastasis or otherwise has involved the internal tissues and organs; (2) those in which these glands have become infected, but in which the disease has gone no further; (3) those in which metastases have occurred without infecting the glands; (4) those cases in which the disease is as yet limited to the mamma. He goes on to say that the cases of the first class are plainly not operable. In those of the second, if clearing out the axilla and removing every gland in the whole neighborhood of the diseased breast and the tissues around them, as well, were to complete the operation as the term implies, it would certainly be justifiable, provided the mortality after this procedure is not too great.

The statistics of local recurrences given by Gross in 1888, are quoted by Morton as follows:

Of 409 cases, partial or total extirpation of mamma, without glands, was done in 96 cases.

Recurrence in or near the cicatrix, 46 cases, being 47.91 per cent.

Recurrence in cicatrix and glands, 31 cases, being 19.79 per cent.

Recurrence in glands alone, 19 cases, being 32.29 per cent.

Of amputation of breast with removal of glands, 313 cases.

Recurrence in or near cicatrix, 235 cases, being 75.08 per cent.

Recurrence in glands alone, 38 cases, being 12.14 per cent.

Recurrence in both places, 40 cases, being 12.77 per cent.

These figures, Morton believes, show the impossibility of doing any operation that deserves to be called "completed" after the invasion of the axilla has taken place. They show, too, that the number of local foci so far from being diminished, is certainly very much increased. These facts, taken with the other very important fact that the immediate mortality after the "completed operation" is double (accordingly to the statistics of Butlin) that after the incomplete, seems to Morton, to utterly condemn the former as a life-saving measure in this class of cases.

In the above division, the third class of cases, in which metastatic tumors have occurred, without antecedent glandular involvement, are clearly not amenable to operation.

The fourth class embraces those cases in which the cancer is as yet strictly local, and hence eradicable by operation.

Morton thinks that after the axillary glands have once become involved it is highly improbable that the disease can be eradicated by any surgical procedure.

A point of great moment, as to the extent of operative precedure, pertains to the leaving of any portion of the mammary gland, when only partially implicated in the carcinomatous growth. The esthetic element should never enter into the decision of such a vital question as the arrest of carcinoma, and whenever a breast is the seat of a malignant tumor, whether wholly or partially involved, there should be no hesitation about removing the entire glandular structure. If a part of the mammary gland only seems to be involved and it is evident the knife can be carried outside of the neoplasm into the apparently sound tissues of the breast, there is every reason to believe that if any portion of the gland is left it may become the seat of disease and that recurrence will most likely follow the operation. On the other hand, an entire ablation offers better prospects of success.

The preservation of such part of the skin as may serve to cover up the denuded surface of the thoracic wall, after removal of the breast depends upon the extent to which the cutaneous covering of the tumor is adherent, and consequently involved in the disease. It may be that the direction of the incision will influence

materially the capacity for bringing the edges of the skin together, owing to the looseness of the attachment and the elasticity of the tissue in one direction being greater than in another so as to favor traction. In most cases saliency of the tumor admits of making a double elliptical incision, so as to take away the adherent cutaneous covering with the diseased breast, and all the skin which is loosely attached by cellular tissue may be safely preserved to cover the wound without undue traction. Retentive ligatures, at the distance of an inch or more from the margin, may be inserted at the points of greatest tension, and between them broad strips of adhesive plaster may be placed to secure union of the edges. If cancer of the breast returns after removal it is inculcated by most writers to operate again and again, so often as the growth appears, and it is held that thus the life of the patient is prolonged. At the present day, when a patient is free from suffering by an operation, under the influence of anesthesia, there can be no objection to the repetition of cutting while the patient is disposed to submit to the knife. But a patient whose breast was removed in a carcinomatous state some three and a half years ago, had a return of the disease within two years, and took matters into her own hands by employing a quack to treat it with escharotics. I had occasion to examine this lady since, and if she was correct in her conclusion that there was a redevelopment of the cancer, it must be allowed that benefit has resulted from the escharotic treatment. The healing process has proceded so that all the wound is completely cicatrized.

The object lesson afforded by the good result in the case has served to gain another convert to escharotic treatment, in the person of another patient, upon whose breast I had performed a primary operation and a colleague had done a secondary operation for a recurred tumor.

Being impressed with the failure of the knife to avert the carcinomatous growth, the husband of the lady acquiesced in her desire to submit to the escharotic treatment on the occasion of the reproduction of the tumor a second time. In my operation the mammary gland was removed, but finding no involvement of the axillary glands, this region was left untouched. When the second operation was determined upon, in my absence from the city, the colleague upon whom it devolved found an enlarged lymphatic gland near the anterior axillary fold, which was removed by the extension of his incision from the site of the tumor, so as to include this gland.

This complete operation did not secure any better result than my incomplete operation had done, and within a very few months I was called again to verify, not alone the return of the tumor, but also the development of the gland. My opinion was requested as to these growths, which were pronounced to be indications of an unmistakable kind, that the carcinomatous disease had not been eradicated. It was also stated that, in view of the past failures with the knife, little was to be expected from the third cutting operation for the extirpation of the reproduced tumor and gland, and the husband was left to his own choice in selecting the treatment of escharotics on this occasion.

The great suffering inflicted upon the patient by the employment of escharotics in the treatment of malignant growths is an objection of great moment, and yet with the use of morphine the pain is so far mitigated as to become bearable. In a recent treatment of epithelioma of the nose, advanced to the ulceration stage, involving the ala and septum the pain from destructive action of the Vienna paste at the outset and the arsenical paste subsequently, required the free use of hypodermics of morphine and atropia to enable the patient to submit to their applications. He bore the pain in the spirit of martyrdom, as I advised removal with the knife and then to perform a plastic operation immediately to rebuild the nose from the tissues of the cheeks. Upon his urgent request to have the escharotic used, I resorted to this mode of treatment under protest, telling him that it would leave him greatly disfigured to effect a thorough eradication of the cancer. He seems to be now free from disease after the destruction of almost the entire nose.

The relative advantages of the knife and cauteries in the management of carcinoma depend very much upon the progress of the disease. In the incipiency of the local trouble there can be no doubt in regard to the excision being preferable to cauterization, but after full development of a tumor with a tendency to degenera-

tion and breaking down of its structure the resort to escharotics has its advantages in extending to the remote ramifications of the disease. It is a prevalent impression that certain caustic applications attack the diseased structure without affecting the sound tissues and that the so-called roots of the cancer are thus destroyed. There seems to be some just foundation for this belief in regard to application of arsenic, but the destructive effect of caustic potash in the form of Vienna paste extends to every vital structure with which it comes in contact, and the same holds in reference to the plaster of sulphuric acid and charcoal as an escharotic.

The chloride of zinc application is not accompanied with so much pain as the previous named escharotics, and yet does not prove so effective, owing to its less destructive agency.

Quite a number of vegetable products have been likewise employed for the treatment of cancerous affections, but are not so prompt and radical in their effects as the chemical escharotics, and, as a consequence, require a longer time to bring about the disintegration of the morbid growth.

One of the most serious obstacles to the progressive improvement of caustic means applied by so-called doctors is the infatuation that their interests are best served by secrecy as to the remedies used by them. The people who seek their advertised treatment are imposed upon by the air of mystery thrown around their procedures, and if the facts were known, it would appear clearly that there was no virtue in their drugs.

The treatment of carcinomatous tumors of the breast with caustics has been tested fully by Baugard of Belgium. His paste contains chloride of zinc, arsenic, cinnabar and corrosive sublimate. Of one hundred and sixty cases, sixty-two or nearly forty per cent. were free from recurrences three years after treatment.

Bougard's experience leads to the inference that there is something connected with the escharotic application in cases of carcinoma, which is more pervading and far-reaching than simple excision with the knife. As this cauterization does not look to the dissection of the glands from the axilla or clavicular region, it seems that this is not requisite to secure the most favorable results.

Having received a circular letter some two months ago, embodying interrogations upon various points, connected with cancer of the breast, it may not be out of place to incorporate them with my replies.

1. Have you ever seen a breast cancer heal spontaneously? Answer—No.

2. Have you ever lost a case as the direct result of operation, since the advent of antiseptic methods? Answer—Yes.

A single case of encephaloid cancer of the breast of large proportions and necessitating extensive exposure of the thoracic wall, died from shock six hours after complete ablation of the mammary gland.

3. About what is the expectation of life after operation? Answer.—This depends to a large extent upon the period at which an operation is undertaken; those done early recover, and those delayed rarely escape a fatal termination.

4. Have you any case of survival of operation without recurrence longer than three years? Answer.—One case was operated upon nearly five years ago, who has had no return of disease; and is in good health at present. The entire breast was removed without entering the axilla.

5. Have you any cases of survival of operation for three years, and later development of cancer? Answer.—No.

6. About how many cases have you operated upon? Answer.—Ten cases, within the past ten years.

7. Has it been your invariable practice to remove the axillary glands, at the time of operation, or merely in cases when there was evidence of involvement? Answer.—The axilla has not been opened except when there was evident enlargement and induration of the lymphatic glands; and my observation of a departure from this course by others has not proved satisfactory. There is ground for doubt as to the advantage of removing the lymphatic glands even when involved in the disease.

Tobacco Odors on the Breath.

To remove the smell of tobacco from the mouth or breath, Grahame (*Apotheker-Zeitung*) advises bromo-chloral, a few drops in a glass of water, with which the mouth is to be well rinsed.—*Medical Age.*

REPORT OF A YEAR'S WORK IN MINOR GYNECOLOGICAL SURGERY IN THE KENSINGTON HOSPITAL FOR WOMEN, PHILADELPHIA.*

CHARLES P. NOBLE, M. D.

I have been led to make this report of my last year's work in minor gynecological surgery by the fact that very little at this time is written about this subject. Whether this is because gynecologists look upon these matters as having been settled, or because their attention is more largely occupied with the problems of abdominal surgery, is an open question. I believe it is the latter, as even cursory reading of such articles as have appeared during the past few years show a great diversity of opinion about the subject under discussion. In my judgment there is no class of work of more importance in the relief of suffering than minor gynecological surgery, and this estimate of its value, under proper conditions, becomes more emphatic with increasing experience. I hope to point out in the comments upon the work reported wherein some have failed to achieve the good results which they had expected, and where others have done positive harm by their work in this field.

There have been one hundred and forty-five operations in minor surgical gynecology done in the hospital during the past year without a death. The operations were divided as follows:

Perineorrhaphy and trachelorrhaphy	24
Dilatation and curetting	28
Perineorrhaphy	20
Trachelorrhaphy	2
Colporrhaphy	10
General operations	37

It will be seen that in twenty-four cases the cervix and perineum were both sutured, that in twenty cases the perineum alone was sutured, and that in two cases the cervix alone was sutured. These facts are of practical interest, as indicating that, as a rule, when the cervix is torn the perineum is also torn, while the reverse does not hold good. When the disproportion between the head and the cervix is sufficient to cause laceration of the cervix, as a rule, the same accident happens to the perineum; at the same time, the cervix may escape and the perineum be torn, either because of its faulty structure or because of mismanagement of the second stage of labor.

* Read before the Phila. Co. Med. Soc., October 25, 1893.

TRACHELORRHAPHY.

This operation was performed twenty-six times; twice alone, and twenty-four times together with the restoration of the perineum. My estimate of the value of this operation remains unchanged. When the cervix is torn, the womb enlarged, the lips of the cervix everted and eroded, with catarrh of the cervix and of the corpus, and especially when, in adddition, menorrhagia and metrorrhagia are present, there is nothing which will bring about the cure of the patient so rapidly, thoroughly and satisfactorily as Emmet's operation on the cervix. It is true that by prolonged treatment of a general character, and with local treatment to reduce pelvic congestion, very many women with laceration of the cervix can be made reasonably well; but this is accomplished only after tedious effort, and then the condition of the woman is not so good as it would have been had she submitted to operation. When properly done, and with proper indications, the operation is practically without danger, and yields very definite and positive good results. Much harm, however, has been done by operating upon the cervix in improper cases; and also, many cases have not been cured because the work has been poorly done. It is hardly rational to expect to cure a woman having diseased uterine appendages by sewing up her cervix; yet this has been done very many times, with the result that the tubal disease has been made worse, a peritonitis immediately ensuing as a direct consequence of the operation, or resulting later through aggravation of the tubal disease. It should be laid down as a fixed law that the cervix should not be sutured unless the uterine appendages are healthy.

It is my practice invariably to dilate

and curette the uterus before doing a trachelorrhaphy, and catarrh of the cervix and corpus, existing as a complication, are thus removed. The cavity of the uterus is thoroughly washed out after the curetting, and thus the field of operation is made more thoroughly aseptic, and the possibility of infection by septic discharges from the endometrium greatly lessened. The principles of asepsis are as rigidly maintained as when doing abdominal surgery. The vagina is thoroughly scrubbed with soap and water after the patient is anæsthetized; it is then thoroughly washed with clean water, and later with bichloride of mercury solution. This preparation of the field of operation precedes all operation upon the utero-vaginal canal.

In performing trachelorrhaphy I have the patient in the lithotomy position, and remove the diseased and cicatricial tissue usually with the knife, at times with scissors, being careful to provide for an ample cervical canal; the rent is sutured with full curved needles, using catgut as a suturing material. Of the very many cervix operations that I have done I have yet to see a case in which primary union was not obtained. All suturing materials—silver wire, silkworm-gut, silk and catgut have been employed, and the results obtained have been the same; hence, as it is usually necessary to operate on the perineum at the same sitting, I employ catgut, because this suture material is absorbable, and the stitches do not have to be taken out.

In cases in which the cervix is thoroughly diseased, either by cicatricial tissue, or by cystic degeneration, I believe it is better to do Schröder's operation rather than trachelorrhaphy; in the few cases in which I have done Schröder's operation from this indication, the results have been very satisfactory.

DILATATION AND CURETTING.

During the past year there have been twenty-eight such operations. This operation is always done for well-marked endometritis, especially if this be accompanied by marked uterine hemorrhage; also for certain cases of dysmenorrhœa. When the pain of menstruation comes on with or after the onset of the flow, and is distinctly intermittent and cramp-like in character, especially if clots are passed from time to time—the passage of the clot being followed by relief of the pain—dilatation and curetting of the uterus has given excellent results. The trouble lies in the selection of the cases. If every woman who suffers pain during menstruation should have her cervix dilated, undoubtedly more harm than good would be done, because in most cases the difficulty is not a narrow cervical canal. It is only those cases where narrowness of the cervical canal is the cause of the trouble that dilatation will be of service. At times, as a result of the narrow cervical canal and the consequent interference of the discharge both of the menstrual and inter-menstrual secretions, endometritis has resulted, for the relief of which curetting as well as dilatation is necessary. If the cases are well studied and the dilator and curette only employed in such cases of dysmenorrhœa as have been referred to, the results obtained will be very satisfactory. The cause of the narrow cervical canal of most importance is a lack of development of the uterus, especially of the *portio vaginalis*.

Much has been written within the last few years of the direful effects of the use of the dilator and curette. The attack upon this operation has been led by Dr. Price, of this city, and all manner of evil consequences has been ascribed to it. Dr. Price has gone so far as to say that the use of these instruments in the hands of others is the reason why he is kept busy doing abdominal surgery. I cannot believe that this is so, because it is so directly at variance with my own experience. I have used the dilator and curette literally hundreds of times, and were they the instruments of evil described by Dr. Price I should have had the evidence of it in my own work; on the contrary, only good has resulted, the exceptions being so rare as to be distinctly remembered, and the reason for such ill results distinctly apparent. They were cases (some three in number) in which, although it was recognized that the uterine appendages were diseased, it seemed best to use the curette to arrest uterine hemorrhage. In these cases the tubal disease was made temporarily worse, yet none of them died, nor were their prospects of cure by means of the radical removal of the tubal disease lessened. It is easy to understand that much harm can be done with the dilator and curette

if they are used in the presence of tubo-ovarian disease, especially if the appendages contain pus. It would be very easy, under these conditions, to cause a leakage of pus into the peritoneal cavity, and a peritonitis. Both on this account and because it is irrational to expect to cure such a patient by the use of the dilator and curette, in my judgment, under these conditions, these instruments should not be employed, or only under exceptional circumstances. I believe that the ill consequences attributed to dilatation and curetting have been due to this error in the selection of cases, and that the many cases referred to by Dr. Price, in which he believes that serious disease of the appendages was caused by the use of the dilator and curette, that in reality the uterine appendages were diseased before dilatation and curetting were done, and that this disease had simply pursued the usual course, or perhaps had been aggravated by the treatment adopted. Under proper aseptic methods, dilatation and curetting of the uterus, when the tubes and ovaries are healthy, is a harmless procedure on the one hand, and upon the other hand it is one capable of doing great good in the special class of cases of dysmenorrhœa referred to, and whenever endometritis exists.

My opinion concerning the safety with which the uterus can be dilated and curetted under the conditions laid down has been strengthened by the work of certain New York surgeons, especially Dr. Polk, who has employed dilatation and curetting of the uterus in large series of cases in which the appendages were diseased, and this he claims not only without harm, but with benefit, especially in cases of catarrhal salpingitis. While his practice and experience have not induced me to extend the indications for this operation in my work, yet they bear heavily against the argument that dilatation and curetting is so potent for evil.

PERINEORRHAPHY.

There have been forty-four cases of perineorrhaphy during the year. The method of Emmet has been followed, and the results obtained have been most gratifying. Primary union was obtained in forty-two patients; in two cases infection and suppuration prevented union. Emmet's operation upon the perineum is a most admirable addition to surgery, and by it results are obtained, where the injury is extensive, involving the levator ani muscles, which cannot be obtained by the methods usually employed. I believe that this operation is the chief work that Dr. Emmet has given to the profession, and of itself would be enough to give him lasting fame. I was prepared to accept Emmet's operation by my training in an obstetrical hospital, where careful study of many lacerations of the perineum during labor demonstrated that these laceration are never median, except at the posterior commissure of the vulva. At the plane of the hymen, which corresponds to the deep perineal fascia, the laceration always becomes lateral; it extends up one or both sulci of the vagina, and, aside from the skin, mucous membrane and connective tissues, involves a laceration of the perineal fasciæ, transversus perinei and levator ani muscles. A rational operation should have for its object the bringing together of these sundered structures. The denudation must involve the torn commissure of the vulva and the torn sulci of the vagina. The credit of recognizing this is due to Emmet.

The originators of the old median operations, the best of which is Hegar's, did not recognize these facts, and indeed they based their operations upon the old erroneous teaching concerning the perineal body. The aim of all such operations is to build a buttress of tissue between the vagina and rectum, with the idea that it, because of its wedged shape, will act as a support to the pelvic organs. It was not recognized that the support of the pelvic organs depends upon the integrity of the levator ani muscles and the pelvic fasciæ, and that the object of the operation, when these structures are torn, is to restore them as nearly as possible to their original condition.

In doing the operation I have usually denuded higher up the sulci than does Dr. Emmet, and have taken care to secure a small introitus by carefully denuding and suturing the torn posterior commissure of the vulva. Catgut sutures have been employed high up in the sulci, and silk sutures through the torn ends of the levator muscles and for the remaining sutures. The results from this operation are more certain and satisfactory than

from any other in gynecology. When a woman has suffered from severe injury of the levator ani muscles and pelvic fasciæ, she has all the symptoms of a hernia; she feels as though the pelvic contents were dropping out. To restore the pelvic floor in such a case to its normal condition is to make the woman a new creature.

PROCIDENTIA.

There have been ten operations for procidentia, either partial or complete. The method employed in operating for procidentia, excepting one case, was to do first a high amputation of the cervix. The vagina is cut loose from the cervix, the bladder pushed off in front and the peritoneum behind. The lateral attachments of the cervix are ligated and cut away, and then about one inch of the cervix is amputated; the cut vagina is then stitched to the cervix, the mucous membrane of the vagina to the cervical endometrium, in this way covering the stump of the cervix with mucous membrane. Next anterior colporrhaphy is done. Stoltz's method is used when there is much cystocele, otherwise the ordinary oval denudation. And finally, Emmet's perineorrhaphy is done, the denudation being made as extensive as possible; the object being not to restore the parts strictly to their normal condition, but in addition to this to make the vagina and the introitus as small as possible.

I have used this method of operating now for four years, and my experience is that by it fully ninety-five per cent. of cases of procidentia can be permanently cured. I know of only one case in which it was a complete failure.

Procidentia of the uterus, almost without exception, is due to laceration of the pelvic floor, involving the pelvic fasciæ and the levator ani muscles. As a consequence of this injury the pelvic viscera are not properly supported, and rectocele, cystocele and prolapse of the uterus ensue. This result is brought about more rapidly in women obliged to do laborious work, and is favored also if for any reason the womb is enlarged and retroverted. The exceptions to this rule are extremely rare; I have seen but one myself. This was a case of complete procidentia in a nulliparous woman. She had been obliged to do laborious work involving much lifting; her womb doubtless had become retroverted, and, having naturally lax tissues, the intra-abdominal pressure had forced down the uterus, distended the perineum, and turned the vagina inside out. As illustrating the nature of the case, she was completely cured by the use of tampons and the pessary. It is important to insist upon the curability of procidentia, because the reverse of this teaching has been advanced of late, and it has been urged as a reason for performing hysterectomy for procidentia. In my judgment this procedure is illogical unless the uterus contains a tumor or is of great size. It might be advisable also in those rare cases of long standing procidentia and rectocele, in which the tissues of the pelvic floor have become atrophied from long continued over-distension, which prevents the restoration of the pelvic floor.

The philosophy of the method of operating for procidentia which has been advocated is clear. By amputating the cervix the size and weight of the uterus is decreased; and a further gain is made by the removal of the cervix, as this, when present favors the prolapse of the uterus by acting as a guide down the vaginal canal, being deflected forward as the uterus descends by the posterior wall of the vagina. By means of the anterior colporrhaphy the slack of the bladder is taken up and the anterior vaginal wall becomes a straight line from the pubic arch to the cervix, as it should be. And finally, the operation upon the perineum restores the integrity of the pelvic floor and insures a permanent cure by affording an adequate support to the pelvic viscera.

GENERAL OPERATIONS.

The thirty-seven general operations consist of the removal of polypi, the excision of papillomata about the genitalia, scraping operations for cancer in cases in which the disease was too advanced for a radical operation, the closure of two vesico-vaginal fistulæ, the excision of the mammary gland, etc. As I have no suggestions to offer in the performance of these operations that differ from the accepted teachings, it is unnecessary to discuss this subject.

GENERAL CONSIDERATIONS.

Success in minor surgical gynecology, and especially in plastic work, depends up-

on a thorough gynecological training, and especially upon a knowledge of the anatomical side of the pathological conditions involved, upon the faithful employment of aseptic methods, and especially upon careful work in suturing. Thorough preparation of the field of operation by careful scrubbing with soap and water, the plentiful douching with plain boiled water, followed by bichloride of mercury solution, is just as important in this class of work as in any other, With an aseptic field, with aseptic sutures and instruments, and with aseptic hands, primary union should be almost invariably obtained. In my entire experience in operating upon the utero-vaginal canal I can recall only three cases in which primary union was not obtained, and in only one or two more did infection along the sutures result in the formation of pus; and in these cases primary union was not prevented.

The suturing material employed in this class of work is somewhat a matter of indifference, as a good operator can obtain perfect results with any of the recognized suture materials, provided it is aseptic. I have long given up silver wire because it is troublesome to use and possesses no real advantage for this work. Silkworm-gut is a most excellent material, but is stiff, and therefore the stitches are more painful to remove than are silk stitches; for this reason, unless there is good reason to fear infection, I do not employ it. In complete lacerations of the perineum into the bowel it should be used in preference to silk. Properly prepared catgut has given me complete satisfaction. This I think is because it has been used only when no tension is to be feared. In the cervix it answers perfectly; also for the upper sutures in the perineum. Wherever tension is expected silk has been employed, and answers every expectation. I should hesitate to use catgut for the lower important sutures in doing perineorrphapy, because straining at stool, or coughing on the third or four day, when the catgut sutures have become weakened, might cause the wound to burst open. There is little difficulty in removing four or five silk sutures from each sulcus of the vagina; and the advantage that the silk will sustain the straining at stool or coughing more than compensates for the trifling discomfort of removing these sutures.

In placing sutures, the operator should always bear in mind what he wishes to accomplish with the suture; if he desires to make surfaces unite the one to the other, the suture must be placed so that when tied it forms a circle or nearly a circle. In this way the surfaces are brought together smoothly, and are held together. Superficial sutures placed parallel to the surfaces which it is desired to unite, act as puckering strings, throw these surfaces into folds, and defeat the object aimed at. This apparently simple matter makes all the difference between success and failure in plastic work.

Parasites in India.

The *British Medical Journal*, 1893, p. 807–808, in reviewing Dr. Jobson's work in connection with Beri-beri, gives the following interesting statistics of the presence of parasites in 1,249 natives of India.

PARASITES	Cases	Per Cent.
Anchylostoma duodenale	944	75.58
Ascaris lumbricoides	131	10.49
Oxyuris vermicularis	192	15.36
Flukes Distoma crassum		
Amphistoma hominis	13	1.04
Trichocephalus dispar	55	4.04
Insect larvæ	6	0.48
Tape worms	18	1.44
Free from parasites	204	16.3

The Clinical Regions of the Abdomen.

In *The Jour. of Anat. and Phys.*, Professor D. J. Cunningham contributes an interesting article on "Delimitation of the Regions of the Abdomen." He recommends that the upper horizontal line should be drawn at the lowest part of the tenth costal cartilages, which is the lowest part of the chest wall as seen from the front. The lower horizontal line is one of more difficulty. Dr. Cunningham suggests one uniting the prominent tubercles on the iliac crests, about two inches behind the anterior superior iliac spines. This line is distinctly below the unbilicus, and puts almost the whole of the iliac fossa in the iliac region. The vertical lines are drawn, one on either side, through the middle of Poupart's ligament.—*Edinburgh Med. Jour.*

BIOGRAPHICAL SKETCH OF THE LATE ISAAC N. KERLIN, M. D.

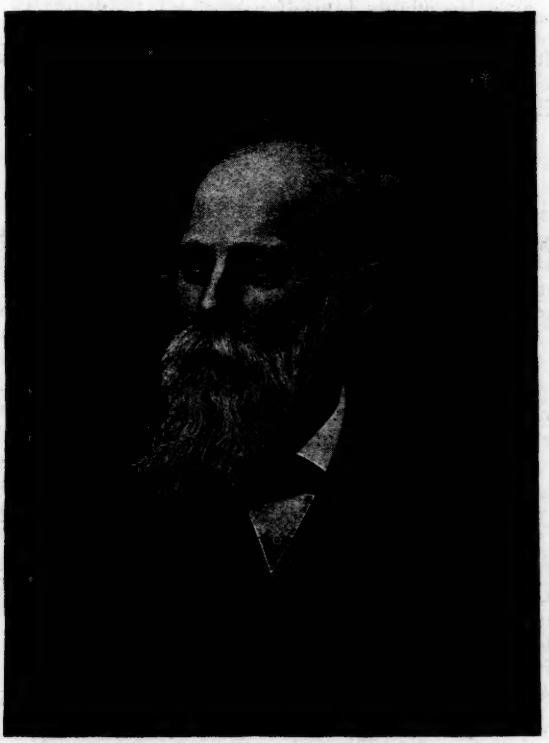
LAURENCE TURNBULL, M. D., P. H. G., PHILADELPHIA.

Physicians may be divided into four great classes.

In the first class the individual enters and makes the profession like any other occupation, a simple means of livelihood, acquiring sufficient medical knowledge by the smallest amount of study and preparation. His chief object is to obtain his degree. He enters upon the practice of this noble profession without hesitation or fear of its grave responsibilities. His main object in life is to acquire patients who can pay; with this idea he attends every call promptly. He takes special trouble by inquiry in regard to the amount the patient earns, his salary or income, and charges accordingly. If not paid promptly he soon ceases his visits, having no compassion for the poor, or, God Almighty's patients.'

The second class is the young physician who may have talents and ability with too high an estimate of himself, lacking energy and good common sense. He devotes too much time to chemical or other scientific experiments; and when called at night, in a storm, or when engaged in some interesting occupation, refuses, or sends to a more willing neighbor. The same individual wonders why he has not a lucrative practice or perhaps sneers at, and ignores his more willing and successful rival.

The third class is the literary, college or



ISAAC N. KERLIN, M. D.

high school graduate, with a knowledge of the dead languages, Latin and Greek to assist him in the derivation of his medical medical words, thoroughly versed in orthography and *belles-lettres* able to write well and spell correctly. Having also certain most useful accomplishments, such as the German and French languages, with practical chemistry and physics, above all a mechanical turn for the handling and use of instruments of precision, giving him a great facility for all the operations on the human body. He fortunately has the opportunity of a hospital appointment, or work in a dispensary district, attending the poor for a nominal sum, acquiring a reputation among them, and when able, they are glad and willing to pay. He adapts himself to their needs, giving them words of sympathy and kindness. By taking both time and trouble studying, up each case, he is successful in curing his patients and he receives his reward in a large and lucrative practice, with their heart-felt gratitude.

A fourth class, enters the profession with a high and lofty object, making every effort to attain the highest average in the examination, graduating not in haste but filling up the full number of years of study. Then with an anxious and great desire to further improve theoretical knowledge, enters a hospital to see every variety of human suffering and diseases treated by the highest talent.

Thus did Isaac Kerlin, first in the Wills Hospital and then as assistant to Dr. Parrish, fit himself as an expert in the almost incurable forms of disease he had to treat. Ultimately becoming the successor of Dr. Parrish as physician and superintendent, he gave personal attention to minutest details in every part of the institution.

Such was our friend, tender as a woman to the poor creatures under his care, acting the part of father, guardian, and true friend. Yet in everything that required tact and decision, he was equally up to the mark. It was his to do and dare what was right and true.

Let us view the beginning of his work at the Institution. A very modest building with poor accommodations and now, see the noble structure erected with every appliance for the instruction of the almost idiotic child, with appliances to bring their bent and crooked bodies back to their proper form, as suitable tabernacles for the bright minds and souls, fitted for use on earth and a brighter future in heaven!

With the Doctor every one was taught both by precept and example how to reach that better home where he has gone before.

Isaac N. Kerlin, M. D., was born in Burlington, N. J., May 27, 1834. His parents were Joseph Kerlin, grandson of one of the Penn settlers on the banks of the Delaware, and Sarah Ann Ware, daughter of John T. Ware and granddaughter of John Ware, both prominent shipbuilders, the former connected with the Philadelphia Navy Yard and an inventor of special methods for lighting the interior of vessels. Educated in the public schools and the John Collins Academy at Burlington, N. J., under the preceptorship of the late Dr. Joseph Parrish, he entered the University of Pennsylvania and graduated as doctor of medicine in 1856.

He was appointed resident physician at Wills Hospital in 1875, from whence he was called to the assistant superintendency of the Pennsylvania Training School for Feeble-minded Children, then in its infancy, in October, 1858. He enlisted in the emergency call in 1862, when the advance of Lee's army threatened Philadelphia; but was called from the ranks by the late State Surgeon-General Henry H. Smith, and placed by him in charge of the night work of the improvised hospital at the Hagerstown Court House, where on the gloomy nights of September 17–21, he gave efficient and faithful service. Three weeks after he was entrusted by Medical Director A. K. Smith, of the United States Army, with the removal of the wounded who were able to be transported to Chambersburg, Harrisburg and Philadelphia. From this service he was called by the United States Sanitary Commission and sent to one of its outposts in Suffolk, Va. Attention was so called to the nature of his work, and especially to his sympathy with the black refugees from the Chowan, that he was recalled to Washington and identified with an inter-

esting epoch in the history of the war which is not widely known. President Lincoln, in December, 1862, was harassed and wavering as to what should be done with the great mass of negroes escaping from slavery, and who were then in wretched condition in camps in and about Washington. He conceived a colonization plan ; the Island of Vache had been leased or acquired to carry out his project, and vessels lay in the Potomac loaded with the blacks and provision for establishing villages when they should have arrived at their destination. The late Henry W. Bellows, president of the United States Sanitary Commission, and Dr. Samual George Howe nominated Dr. Kerlin to the President for the important service of director of the colony of Vache. Pending his arrangements to take charge of the emigrants, small-pox broke out in the fleet, heavy storms arose and the scheme was reluctantly abandoned by the President, to be followed in the spring by the Contraband act, which forever settled the mind of the President as to what to do, or what not to do, with the blacks. After this, Dr. Kerlin was moved by the principal officers of the Commission to the charge of the field work of the Sanitary Commission of the Army of the Potomac, then badly needing reorganizing, and here he remained until after the battle of Chancellorsville in May, 1863, winning for himself the approval of the Commission by his organizing ability and indomitable energy. Later he was urgently recalled to his old post at the Pennsylvania Training School for Feeble-minded Children, and succeeded Dr. Parrish as superintendent in November, 1863. His name and life are inseparably connected with that institution and with the uplifting of this unfortunate class; but he kept himself in intimate touch with the medical profession of the state and country, contributing to the journals, numerous articles bearing on the subject of idiocy, and was a member of County and State medical associations. In connection with the care and training of the feeble-minded he was the author of two small volumes, "The Mind Unveiled," 1859, and "The Manual of Elwyn," 1891. In July, 1876, he invited to Elwyn the superintendents of the then existing institutions for the feeble-minded and organized a national association, the proceedings of which for the first decennial period were edited and published by him in a volume of four hundred and fifty pages.

In 1889, Dr. Kerlin, in company with his wife, made a protracted foreign visit and were the guests of Dr. Hack Tuke, Jonathan Hutchinson, the late Joseph Beck and of almost all the prominent institutions for the feeble-minded in Great Britain, Norway and Denmark. His wife, Harriet C. Dix Kerlin, closely identified with and honoring his life work, died in December, 1892, leaving four sons—John Ware Sharpless, Isaac Newton, Jr., Ward Dix and Thaddeus Leavitt.

The funeral of Dr. Kerlin, who died Wednesday night, October 25th, was held on October 28th, at his residence at Elwyn, Delaware county. There was a large attendance of friends and officials and attachés of the school over which the doctor had presided for thirty years, with several of his most intimate medical friends. The interment took place on the grounds of the institution. He was placed in a vault built to contain his beloved wife's remains. The Board of Directors held a meeting previous to the funeral and adopted appropriate resolutions of regret and of condolence with the bereaved family.

Dr. Kerlin had not only devoted the best years of his life to this school and won for it the highest rank among institutions of the kind, but he framed the original draft and secured the passage of a bill through the Legislature for a similar institution in the western part of the state. The site for the new school has been selected at Polk, Venango county, Pa.

Mr. Gutekunst has furnished a most admirable and speaking likeness of the Doctor, with his dome-like forehead, his well-shaped nose, and above all the peculiarly happy twinkle of the eye with which he greeted his friends.

God give us, like him,
Strong minds, great hearts, true faith and ready hands;
Men whom the lust of office does not kill;
Men whom the spoils of office cannot buy;
Men who possess opinions and a will;
Men who have honor; men who will not lie.*

THE originator of the intense creasote treatment for tuberculosis, Prof. Sommerbrodt, died at his home in Breslau, August 14, 1893.

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* Versified from Oliver Wendell Holmes.

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SATURDAY, NOVEMBER 25, 1893.

EDITORIAL.

RESPONSIBLE CRANKS.

From the time that irresponsibility was first urged in extenuation of criminal acts, insanity has proved a city of refuge to wrong-doers. Imagination could not devise a weapon of defense more elastic, more elusive nor more efficient. An astute lawyer can make the term 'insanity' cover almost anything from the 'incapability' of the man of property—which is suspected for the first time when some disappointed heir solicits a microscopical examination by the probate court, through the 'temporary aberrations of mind'—which charitably explain the suicide of the debauchee, the unfortunate lapse of the trusted employee, or, in fact, any overt act of moral turpitude that is found out, to the atrocities committed by the violent maniac.

This plea more than any other, perhaps, has righteously served to protect unfortunates from 'man's inhumanity to man,' and likewise, more than any other, it has unrighteously served to elevate crime to a speculation with the chances in favor of the criminal. So intangible is it that the testimony of medical science is practically valueless in the courts and the 'medical expert' has become a by-word.

The daily papers report that a thorough medical examination shows the assassin of the late mayor of Chicago responsible for his acts. This is as it should be so far as our information goes and relying on general principles.

There is one phase of the question which it is desirable to take into consideration. An author, writing for the *Open Court*, presents the very sound view that the theory of political assassination is a justification of private murder. The recent expression, called out by the murder of Mayor Harrison, is but the echo of his words written when Alexander II. was killed by the explosion of a Nihilist's bomb. He then said: 'Once admit the right of assassination as a remedy for political evils, and there will always be somebody under sentence of death, a mark for the private executioner. It is the menace of death to every man above the grade of a tramp."

This is a logical and an absolute statement. Deductively, therefore, they who advocate the murder of a sovereign, ruler, or Governor are promoters of assassination, which is very little different from being accomplices to murders committed in pursuance of those theories of political assassination. The man who incites to crime is as guilty as the man who commits the crime. That has always been held in the case of hired assassination. The man who gives another a certain sum to do a murder, or promises him a material reward on the execution of the deed, is a principal to the murder. Now, it does not make much difference what the nature of the reward may be, whether it be money, food, or the assurance of a bettered condition. The incentives to murder may be as different as are the varieties of murderous actions.

If, therefore, General Trumbull be right in his proposition, the orator who tells a crowd that peace, happiness, independence or prosperity will follow the killing of the rulers or capitalists is indisputably an accomplice with the man who rushes off and kills a ruler or a capitalist. Incitement to murder is no less heinous than the procuring of murder to be done by the payment of reward to the murderer, and the sophistry that condemns the actual commission of a crime and pleads for the immunity of the instigators, the suggestors of the crime, will hardly persuade the American people to destroy the tool and do no harm to the hand that drove it home.

If men who, acting under the influence of incendiary speeches of specious orators, shoot down or cut down some public character are to be exempted from punishment on the plea that they are "cranks" or lunatics, there can be no restraint put upon murder. To use the very words of General Trumbull, that would "threaten every man in America who can wear a decent coat."

There is a responsible insanity. If we hang some of the so-called "cranks" whose "insanity" takes the form of killing the men who displease them we will have fewer assassinations. The example of the gallows uncompromisingly employed is a superb check upon the exhibition of homicidal crankiness. Cranks can reason very well in the eye of the gallows.

THE FOOD EXPOSITION.

The Retail Grocers' Association of Philadelphia have for a number of years past held annual meetings of the 'Pure Food Exposition.' The association is formed for the protection of dealer and consumer alike from adulterated food-stuffs and injurious compounds; for the encouragement of the manufacture of pure products, and for the introduction to the public of novel and meritorious food preparations. The annual exhibition has been remarkably popular, especially among intelligent ladies who have at heart the interests of the healthy home and family.

While the exposition is of immediate value to the exhibitors, being a most successful mode of advertising, it has a much greater, though less definite, value to the public at large in that it is an educational factor of no mean importance. The exposition will be of benefit to medical men and it will repay inspection and study. Not only are the exhibits open to free inspection, but information as to composition and methods of manufacturing is freely given. Instructions are furnished as to mode of preparation of various food articles, and liberal samples are allowed

for experiment and trial. The whole exposition is a popular object-lesson of the scientific production and preparation of food materials.

A very valuable and perhaps the most popular feature of the annual exhibition is a course of lectures and demonstrations on the preparation of food, given by Mrs. S. T. Rorer, a teacher of national reputation. This lady whose intellectual powers and tireless energies would make her preeminent in any calling, has devoted herself to the scientific investigation of foodstuffs and the best methods of preparing them, and to teaching the practical application of the results of her study. Having more than ordinary information as to the physiological and chemical processes involved, she has a right to speak as one having authority, and, always ready with a reason for the faith that is within her, should be heard with attention and consideration.

One lecture in the course for the special benefit of physicians, is given to the preparation of food for the sick, and the physician who is fortunate enough to hear the lecture will find he has gained more of practical benefit from this clinical demonstration than he could glean from physiologies and chemistries innumerable.

BACTERIOLOGICAL NOTES.

RESEARCHES ON CHOLERA AND VIBRIOES.

Metschnikoff (*Annales d L'Institute Pasteur*, 1893, vii, p. 562), describes the pathogenic effect of several vebrios or comma-shaped spirilla as revealed by a series of inoculation experiments. He has also studied their effect in passing through the human body, more especially the effect which such a condition would exert upon the virulence of the growth. The results of bacteriological investigations during the past few years has resulted in the discovery of a large number of *spirilla* which resemble very closely the germs of Asiatic Cholera described by Koch in 1884 in the excreta of cholera patients. The more important of their forms Metschnikoff has tested so far as their pathogenesis goes. These conclusions are of considerable interest. He confirms Koch's results in that he believes the comma bacillus of Koch is the real cause of Asiatic cholera, notwithstanding its clear resemblance to other spirilla, especially the vibrio metschnikovii. Although he considers this germ to be the cause of the disease, it is an undoubted fact that immense quantities of cholera bacteria can be taken into the intestine without causing cholera. In order to acquire the disease he thinks that the body must be in a state of peculiar susceptibility, the exact nature of which he does not attempt to explain. It is not a question of a predisposition to indigestion, but something quite distinct. The conditions under which cholera vibrio are found in man are very complicated. These microbes, as well as the product of their growth, enter into multiple relations with the digestive juices and the cells of the organism (host.) On the other hand, these bacteria and toxines come in contact with other micro-organisms in the digestive tract and undergo the action of their various products. Judging from what has been done it would seem that the method of vaccination through the digestive tract is much more efficacious than by the hypodermic method. It appears also that the other vibrioes analogous to the cholera vibrio may be pathogenic to man. It may be considered as true that the natural cure of cholera is accomplished without any preventive power being set up in the blood. Finally, he believes that cholera runs its natural course without the production of a preventive property or substances in the blood. The differentiation of certain of the intestinal spirilla from the cholera vibrio is found to be exceedingly difficult.

PHYSIOLOGICAL ACTION OF THE ALBUMOSES FOUND IN THE TISSUES IN DIPHTHERIA.

Martin has contributed some interesting facts to our knowledge of the action of diphtheria bacteria. The work deals with the albumoses found in tissues of diphtheria patients and in cultures of the specific bacteria and their effect upon animals. His work is published in full in its *Report of the Medical Officer of the Local Government Board* 1891–1892 from which the following conclusions are taken.

1. "The bacillus diphtheria forms in diphtheria membrane and in culture media, proteid products of the same chemical nature as those found in the bodies of patients dead of diphtheria, viz., albumoses and an organic acid.

2. The albumoses formed by the bacillus diphtheria in artificial cultivation, have in single and multiple doses the same physiological action as those found in the human body after death by diphtheria. This action is the production of fever, of diarrhœa, of loss of body weight, and of a progressive paresis of the muscles, resulting from a degeneration of the peripheral nerves.

3. The bacillus diphtheria is, therefore, the primary infective agent in diphtheria.

4. The diphtheria bacillus liberates in the membrane a ferment which when absorbed digests the proteids of the body, forming albumoses and an organic acid.

5. These digested products, which are the agents in producing death cause the fever and the depression, and as well the paralysis which follows diphtheria."

A further interesting point to which Dr. Martin calls attention is, quoting his own words, "It is clear from the cases of diphtheria which have been described that the diphtheria products found in the body do not all come direct from the membrane." This conclusion is reached from the fact that in certain cases where there was very little membrane there was a larger amount of diphtheria products in the body. He also believes that there is something more than absorption taking place from the fact that the spleen contains a large quantity of the albumoses and the organic acid, while their specific physiological action shows that they are foreign to the normal body. He believes it more probable that the ferment absorbed from the membrane digests the more or less stagnating proteids in the spleen.

TRANSLATIONS.

THERAPEUTIC HINTS FROM FOREIGN JOURNALS.

IN CHARGE OF THE TRANSLATOR, F. H. PRITCHARD, M. D.

MERCURIAL TREATMENT OF GLANDERS IN THE HUMAN SUBJECT.

Dr. L. K. Gralewski (*Sel-I-Kwai-Medical Journal*, No. 9, 1893) details a couple of very instructive cases of human glanders treated by inunctions of mercury. A gentleman, of forty years, was attacked with acute glanders, in a very severe form and succumbed on the twenty-seventh day, notwithstanding treatment by antipyretics, tepid baths, painting the ulcers with carbolic acid and the internal administration of the iodide of potash. A relative of his, an old gentleman of seventy, yet strong and in good health, contracted the disease and presented itching pink papules on the hands, back, neck and feet. When seen on the seventh day of the symptoms he complained of general prostration, headache, and fever of 39. 8° C. There were besides a crateriform ulcer, with uneven and undermined edges and a congested and elevated encircling zone, and abscess of the size of a walnut on the back of the neck. This was evacuated and, together with the ulcer, painted with carbolic acid and mercurial ointment, in doses of four grams (one drachm) was prescribed epidermically.

In about five days the nodules ceased appearing, the old papules were transformed into small pustules, while others—those freely painted with carbolic acid—sloughed away in ten to twelve days, leaving a delicate pink skin. The course of the disease was exceedingly obstinate and protracted, a complete recovery ensuing about the seventieth day. The total quantity of salve used was about two hundred grams (six ounces and a half). In spite of this energetic use of the drug not the slightest sign of mercurialization was remarked, though a gargle of the chlorate of potash was employed as a precautionary measure. The other case was that of a peasant woman of thirty-five, the servant of the family, who washed the linen of the deceased. She had a fissure in the skin of the dorsum of the right hand between the thumb and forefinger which, on the third day after her last washing, was transformed into a rapidly increasing abscess which in four days attained the size of a hen's egg, while there supervened headache, pain about the hand, and high fever. The pus cavity was opened and washed out antiseptically and mercurial inunctions were ordered. Rapid improvement followed, the patient making a perfect recovery, in seventeen days. Only forty-eight grams (an ounce and a half), of the salve were employed in this latter case. The author adds that while both the adults who nursed the patient contracted the disease, his three children, aged from four to ten years, who were all the time in the closest possible contact with him—laid in bed with him, kissed him, etc. —did not contract the affection. Children hence seem not to be very susceptible to the virus of glanders.

DYSMENORRHŒA.

Dr. V. Cocq (*La Semaine Medicale*, No. 59, 1893) recommends the following formula in dysmenorrhœa:

℞ Fluid Extr. Viburnun Prunifolium,
Fluid Extr. Jamaica Dogwood, ana 2 gms. (gtts xxx.)
Elixir of Garus,..... 20 gms (5v).
Simple Syrup. ..... 30 gms (5j).
Water..... 140 gms (5 ivss).

A Dessert spoonful every two hours.

SALICYLIC ACID AS A TAPE-WORM REMEDY.

Dr. Ozegovski (*Medicinische Neuigkeiten*, No. 36, 1893) speaks highly of salicylic acid as an expeller of tape-worms. He administers it as follows. The patient eats no dinner nor supper, and in the evening takes an ounce of castor oil (thirty grams). The next morning another dose of castor oil, of fifteen grams (½ ounce) is prescribed and from eight o'clock on, a gram (fifteen grains) of salicylic acid, every hour until four doses have been taken. If the worm is not expelled after the fourth dose, another dose of half an ounce of oil may be ordered.

CHLORATE OF SODA IN CANCER OF THE STOMACH.

Dr. Brissaud (*Weiner Medizinische Presse*, No, 42. 1893) knowing the favorable influence of the chlorate of potash in epitheliomata of the mouth and certain forms of cancroids of the face, was led to try chlorate of soda in carcinoma of the stomach. The soda salt has the advantage of being more soluable and less poisonous than the potash salt. By its employment, in doses of eight to sixteen grams, per diem (two to four drachms) he has obtained undoubted improvement in pronounced cases of carcinoma of the stomach with distinct tumor. Under the influence of this treatment, in five cases where the diagnosis was unquestioned, the vomiting of blood ceased, the appetite returned, the cachexia disappeared and in three cases where there was a distinct tumor in the epigastrium, it disappeared completely. He left all cases where there was any doubt entirely out of his report. The epithelial forms are especially those which are favorably influenced, but the interstitial carcinomata were unimproved. On the contrary, there are cases where no such result is to be expected on account of already existing metastases, or grave complications. Other physicians—Hanot, Legendre, have obtained astonishing results with the chlorate of soda, in carcinoma of the stomach. Lepine, of Lyons, has used the chlorate of potash with good results in epitheliomata. He advises not only the use of the remedy but in large doses.

CRYSTALLINE A SUBSTITUTE FOR COLLODION.

Dr. L. Phillips (*La Semaine Medicale*, No. 59, 1893) presents this substance, a solution of pyroxyline or gun-cotton in methyl alcohol, as a substitute for collodion. It is analogous to collodion but it

evaporates less rapidly and forms upon the skin a translucid, durable and imperceptible film upon the face instead of the opaque and friable pellicle of collodion. Hence it is of especial value in the application of remedies to the face and its slow evaporation enables it to be handled more easily. Its sole inconvenience is its penetrating odor. An elastic crystalline may be prepared as follows :

℞ Crystalline..... 20 gms. (℥ v).
Castor oil..... 5 gms. (℥jv).
Canada Balsam..... 10 gms. (℥ijss).

An excellent white varnish may be prepared as follows :

℞ Crystalline..... 30 gms. (℥ j).
Castor Oil ..... 4 gms. (℥j).
Oxide of Zinc..... 8 gms. (℥ij).

Crystalline easily dissolves salicylic acid, pyrogallic acids, chrysarobine, sublimate and many other remedies. He has found it of service as a vehicle in various forms of tenia tonsurans, warts, eczema marginatum, lupus erythematosus, syphilides, acne and keratoses. The complete transparency of the pellicle permits one to follow the results of treatment more closely. In confluent acne of the face he has gotten excellent results by the following treatment : the affected part is sponged with a solution of lysol which is allowed to act for a few minutes, then the skin is dried by means of blotting paper and is then covered with a fine film of crystalline. This is left in place for eight days when, on removal, a second application of lysol and crystalline will suffice to effect a cure.

PHENOSALYL AN INNOCUOUS ANTISEPTIC.

Dr. de Christmas (*Le Progrès Médicale*, No. 38, 1893) presents the following compound antiseptic which is nearly as powerful as sublimate and possesses none of its inconveniences.

℞ Carbolic Acid..... 9 gms. (℥ijss).
Salicylic Acid..... 1 gm. (grs. xv).
Lactic Acid..... 2 gms. (gtts. xxx).
Menthol..... 10 cgms. (grs. jss).

This mixture which he calls phenosalyl, is but very slightly toxic, being but two times less active than sublimate is only necessary to use it in very dilute solutions, from 5–7.5 : 1000. In the proportion of 20 : 1000 it will sterilize completely tuberculous sputa—one of sputa to five of solution—after fifteen minutes. It is prepared by heating the three acids to liquifaction and then adding the menthol. It is very soluble in glycerine and in water in proportion of four parts per hundred.

DIPHTHERIA.

Dr. Trouillet (*Il Racooglitore Medico*, No. 10, 1893) recommends the use of Gaucher's collutory, which composition is as follows:

℞ Tartaric Acid..... 1 gm. (grs. xv).
Carbolic Acid..... 50 gms. (℥jss).
Camphor..... 20 gms. (℥v).
Alcohol..... 10 gms. (℥ijss).
Castor oil..... 15 gms. (℥iv).

Apply locally with a camel's hair brush, several times a day. With this local application the membranes disintegrate and are easily removed. It does not destroy the epithelium nor give rise to secondary infection.

HYPODERMIC INJECTION OF MERCURIAL OIL IN CEREBRAL SYPHILIS.

Dr. J. Sacaze (*La Semaine Medicalè*, No. 59, 1893) observed three cases of cerebral syphilis which he treated successfully by hypodermic injection of mercurial oil. The first was a woman of thirty-five, who for about five months had had a very severe headache with nocturnal exacerbations which had resisted the ordinary measures. As certain symptoms were remarked which pointed to syphilis of very recent date—symmetric copper-colored patches on the internal surface of the knees, falling out of the hair and enlargement of the inguinal glands—it was diagnosticated as of syphilitic origin. Inunctions of mercurial salve and two grams (gr. xxx), of the iodide of potash, per diem, after five days' use being followed by no results, a hypodermic of gray oil, not an intramuscular injection, was made, the oil being prepared according to the following formula:

℞ Metallic mercury..... 20 gms. (℥v).
Lanoline..... 5 gms. (℥jss).
Liquid vaseline..... 35 gms. (℥j. 1-4)

Each cubic centimetre, (fifteen grains,) contains fifty centigrams (eight grains) of mercury. From five to seven cgms. (three-fourths to one grain) of mercury were injected at a time. The headache diminished in intensity from the moment the injection was made and it disappeared completely by the fifth day. The first was made the 10th of March, the other three, the 24th and 31st of March, and then one on the 7th of April. The 27th of April, the headache reappearing, another injection was given and it disappeared the next day. Since then several

injections, at regular intervals, sufficed to hold it in check.

The second patient was a servant girl, of twenty-three years, of a robust build, who had for some time been troubled with epileptiform attacks with disturbances of mind, apathy, hebetude, etc. The bromide of sodium associated with borax, was given without result. Various alopecic patches and red spots on the body leading to a suspicion of syphilis, an injection of the oil was made one morning. From the evening of the same day a profound change was observed in her symptoms. Her apathy and hebetude disappeared and she began to interest herself in her work. During the days following this amelioration persisted and her epileptiform seizures did not reappear. The injections were repeated every fifteen days. The patient left the hospital two months and a half after the first injection, completely cured.

The third patient, a woman of thirty-eight years and alcoholic, presented for about a year, slight epileptiform attacks and some symptoms of dementia. She also suffered from alopecia, which led to a suspicion of syphilis, in spite of absence of other symptoms. One single injection of the gray oil suppressed the attacks immediately. After two more injections, repeated at intervals of twenty-two, and nine days, all the cerebral symptoms disappeared. This certain and prompt action of the oil, in cases of cerebral syphilis lead the writer to suggest that it be employed as a means of diagnosis in subjects presenting epileptiform, comatose or other grave symptoms with an obscure origin.

CYSTITIS.

Dr. Luys (*Deutsche Medicinische Wochenschrift*, No. 35, 1893), in a case of tuberculous cystitis in which the urine was very purulent and bloody, and the patient was obliged to urinate every five minutes, with very violent pains towards the end micturition, employed instillations of sublimate, 5:100, according to Guyen's recommendation. To prevent violent pain cocaine was first injected. The first injection was followed by slight hematuria which soon disappeared. They were given every day. Great improvement soon set in so that he was forced to urinate only every half hour. During the following months they were given every second day, later every eight to fourteen days and, finally, every two months. His urine was clear and he was obliged to micturate every two hours, although he was not cured he was placed into a tolerable condition, at least.

Dr. Okleoblom (*Ibid.*), in cystitis, and especially in gonorrhœal vesical catarrh, recommends instillation by means of Guyen's syringe, every second to third day, of one to six cgms. (fifteen drops to a drachm and a half) of a solution of iodoform in ether and oil, 1:7:7. The pain and tenesmus cease at once.

TO DISINFECT SEWERS, WATER-CLOSETS, ETC.

In the (*Raccoglitore Medico*, No. 10, 1893), the following means of disinfecting sewers, drains, water-closets, etc., is recommended. Prepare as much quick-lime as desired, break it into small pieces and place it in liquid carbolic acid for a quarter of an hour, and then preserve it in a tightly-closed vessel. If one wish to disinfect a sewer throw into it a few pieces of the lime which will absorb dampness and send forth any quantity of vapor, impregnated with the carbolic acid, which will penetrate all through the sewer and disinfect it perfectly. Repeat it twice a day.

DYSPNŒA OF ACUTE PHTHISIS.

Dr Bernheim (*Deutsche Med. Wochenschrift*, No. 37, 1893) recommends in the dyspnœa of acute phthisis the following formula:

℞ Caffeine Citrate..... 2 gms. (grs. xxx).
Sulphuric Ether..... 20 gms. (℥v).
Inject two grains (30 gtts). morning and evening.

A Sign of Breech Presentation.

When, in a woman who has passed the sixth month of pregnancy, a sharp pain is produced by placing the hand on the fundus uteri, it may be almost affirmed that there is a breech presentation. The fact is very frequent, although not constant, being present in about seventy per cent. of cases. The pain is sometimes spontaneous. How is it to be explained? According to Pinard, it is due to the irregular distention produced by the rounded mass of the head. If version is performed, the pain disappears.—*La Clinique Internal.*

DIAGNOSIS OF DIPHTHERITIC ANGINA.*

Marfan (*Le Bull. Méd.*, May 24, 1893), would enforce the following precept in infantile medicine. In the adult an examination of the throat is not necessary unless the patient complains of pain and pharyngeal dysphagia, or when there is some peculiarity in the clinical history as for instance when there is a suspicion of syphilis. In children, however, and especially in small infants, this examination of the throat should always be made whatever may be the trouble for which one is called in consultation and this exploration provokes ordinary cries and agitation which should be utilized to the end of the clinical investigation. The examination of the pharyngeal region will permit us to recognize whether an angina exists. This recognized it is necessary to establish a primary distinction; whether the throat is red or whether it presents on its surface a whitish layer. If it is red there is an erythematous angina present and the fear of diphtheria may be deliberately discarded. One has said, it is true, that diphtheritic angina may appear in two phases: an erythematous and a pseudo-membranous, and some physicians affirm to having seen the disease in the purely erythematous phase; but these affirmations are quite exceptional. If in doubt withhold the diagnosis a few hours when, if the case be diphtheritic, a whitish exudate will be produced. On the contrary, if it be found that the angina is accompanied by the presence of a whitish layer it is always necessary to think of diphtheria and the signs of this disease must be looked for.

There are two principal white anginas: 1. Follicular angina; 2. Pseudo-membranous angina. The *follicular angina* is characterized by the production in the crypts of the tonsil of a whitish material consisting of mucus epithelial cells and round cells. This has been called *cryptic* or *lacunar* tonsilitis. Its aspect is typical; on the more or less tumified and reddened surface of the tonsils may be seen small white spots, about the size of a millet seed. Each of these small spots represents the orifice of a tonsillar lacuna filled with the whitish exudate. Pressure with the finger upon the tonsil will cause this creamy material to exude. The exudate is not adherent. It is easily removed and often gives off an odor somewhat fetid. Placed in water it dissolves completely. In this form of angina the exudate primarily infra-cryptic may at times spread over the surface of the tonsils and give more or less thickness to the whitish spots, and these may even fuse; but nearly always the exudate does not escape the bounds of the tonsillar region to invade the folds of the palate or the uvula. Moreover, in no case may this white material be taken for a false membrane, because it may be readily removed, and dissolves in water.

Pseudo-membranous or *membranous angina*, is quite different from follicular angina. In the beginning there may be seen upon the two tonsils or upon one, a white spot, large. This may at first be readily detached from the tonsil to which it is adherent especially by intra-cryptic filaments; below the exudate the mucosa is red and a little abraded; around it the mucosa is swollen. This first white spot has a great tendency to spread; it does not remain limited to the tonsil but extends to the roof of the palate and its pillars, and down upon the surface of the uvula which may be covered as if by a glove. It also invades the posterior wall of the pharynx. White at first the false membrane becomes finally a dirty gray. Little by little it thickens, becoming more prominent and more adherent. If a piece be removed for examination it will be found to be quite adherent; cannot be scraped off, and will not dissolve in water; it is torn with difficulty; under the microscope it is formed mainly of fibrin and epithelial cells. Once removed it is reproduced nearly always with more or less rapidity, while the exudate of lacunar tonsillitis does not return after clearing a region. Bacteriological researches have shown that all of the pseudo-membranous anginas are not diphtheritic, that is to say, are not caused by the bacillus of Klebs. In other words a pseudo-membrane may be produced by other bacteria, the streptococcus, the staphylococcus, the pneumococcus, and by an unnamed coccus described by Roux and Yersin. In these cases the false membrane is indistinguishable from the diphtheritic membrane.

* Translated for THE MEDICAL AND SURGICAL REPORTER by W. A. N. Dorland, M. D.

ABSTRACTS.

CONVULSIONS.

Dr. Charles G. Kerley in this article considers "that class of convulsions most frequently met with in children under three years of age, such as come on during apparent health or slight illness, rather than those which develop during or at the close of some serious disease. I know of nothing that will so quickly and thoroughly demoralize a family as the occurrence of an unlooked-for convulsion in one of the children.

A certain degree of fright on the part of the friends and relatives is to be expected, as the appearance of a child during a convulsive seizure is most alarming to those not accustomed to the sight. I am sure, however, that the fright and anxiety would be lessened to a great extent if the nature and termination of such convulsions were better understood, and if it were known that the cause in a large majority of the cases lies in the gastro-intestinal tract, due to an error in diet, and that the attack is not necessarily a symptom of brain disease, as is usually imagined; further, that nearly all such convulsions are entirely recovered from if intelligently managed. Nearly all of the attacks of this nature which I have seen occurred either in badly fed bottle babies, or in those beyond the bottle age who were given their food irregularly or in quality or quantity unsuited to their age. The custom in same households of giving the baby "just a little taste" of some forbidden food is not an infrequent cause of convulsions; the child is pleased with the new sensation, demands more, the "tastes" are repeated and trouble follows. In a few cases I have known a seizure to follow a single indulgence in cake, pie or fruit. I have seen but four cases in fairly well-managed breast-fed infants. In these, one attack followed a fall, the child having received the full force of the fall on the head; in the second, it was the initial symptom of lobar pneumonia; the third was a case of infantile paralysis in which convulsions attended the acute stage; in the fourth, convulsions resulted from a profuse cerebral hemorrhage. In a case occurring under my care an eighteen-months-old-girl had repeated convulsions. The mother supposed teething to be the cause and was frantic because I refused to lance the perfectly healthy, innocent gums; there was no sign of a tooth coming through. After a large dose of castor oil had been given, the patient passed one-eighth of an orange.

Children with rickets are especially predisposed, and an indiscretion in the diet which in a healthy child would produce no discomfort may bring on a violent attack in one so affected.

Teething as an exciter is generally supposed to play an important rôle. This process as a direct cause, through the irritation produced by the direct pressure of the teeth on the gum can, in my opinion, be excluded entirely. Between nine hundred and one thousand infants have cut their teeth while under my care, some of whom had convulsions while teething, but in not a single instance was the teething process a direct cause. Thorough investigation of the circumstances attending the attack and examination of the patient would reveal the true seat of the trouble, which was usually found in the alimentary tract. Had these teething babies been examined only superficially, or had they not been examined at all, as is too often the case, the cause would most certainly have been ascribed to the teeth.

A very interesting case in a child under one year of age was reported several years ago in the London *Lancet*. A long hair became fastened between two teeth and hung down the throat; the irritation of the alimentary tract thus produced caused repeated attacks until the hair was discovered and removed.

Convulsions may occur in the very young and weak as the result of heat prostration. Worms are mentioned as a fruitful cause. I have seen but one case of this nature, in a strong boy of three years. That he should show marked nervous disturbance is not surprising, as vigorous, well-directed treatment removed forty large round-worms during the next three days.

Lobar pneumonia is sometimes ushered in with convulsions, but this occurs far less often than we would be led to suppose.

Among seventy-five cases which I have had the opportunity to observe, convulsions were the inital symptom in but three. The onsets of the brain diseases known as simple and tubercular meningitis, according to my experience, rarely occur with convulsions; they are, of course, a common symptom of these diseases, but usually appear after a period of illness, the symptoms of which are very often diagnostic of serious brain disturbance before the advent of convulsions.

Cases have been reported which were supposed to be due to the irritation produced by unsuitable, tight or ill-fitting clothing, this is certainly not a very common cause; if it were the physicians of this country would be fully occupied caring for infants with convulsions.

The question is often asked, can a child inherit a tendency to convulsions? The offspring of the epileptic and the neurotic are certainly predisposed. The decidedly ancient notion than an infantile eczema should not be treated and cured because it may "strike in" and produce convulsions is too absurd to deserve further mention.

Simon believes that 80 per cent. of the attacks occurring in young children are due to digestive disturbances. Concerning the entire number of cases seen by me, 80 per cent. were due to simple digestive trouble. Besides those occurring during brain diseases, quite a number developed during whooping cough complicated with broncho-pneumonia. Many of the fatal cases of inflammation of the bowels have convulsions late in the disease, death frequently occurring in the attack. I have also seen a few cases occur during scarlatina, measles, malaria, diphtheria and Bright's disease. As regards these cases, however, which come on during apparent health or slight illness, fully 95 per cent. were due to some disturbance in the stomach or intestines. With proper feeding, bathing, clothing and fresh air, the chances of convulsions are very small indeed.

What is to be the management of a child if attacked? The family physician must be summoned at once, a hot mustard bath should be arranged as soon as possible into which the child is placed and kept from ten to thirty minutes, by which time the seizure will ordinarily have passed off, and the child will make known its return to the normal condition by crying. As soon as swallowing is possible give from 1 to 2 teaspoonfuls of castor oil, according to its age; in case vomiting follows, it may relieve the stomach of offending material; if the oil is repeated in a few minutes with a few drops of whiskey added, it will almost always be retained. When the patient is removed from the bath, rub him vigorously until dry, put him in his crib and apply cold cloths to the head; do not hold him on the lap. The room should be cool, darkened slightly, and the patient kept absolutely quiet. If the bowels do not move in a reasonable time, a large warm-water enema should be given. The enema should be given as soon as, or even before, consciousness returns, if there has been habitual constipation, or if the abdomen is at all distended.

The management during the few days following the attack it important. Light and easily digested food must be given—preferably fluids; the bowels should be carefully looked after and all means of excitement avoided; plenty of fresh air is also of benefit. The physician should always be sent for, no matter how light the attack, as it is very apt to be repeated if the cause is not discovered and removed."—*Mother's Nursery Guide.*

The New Entries at the London Medical Schools.

The following is the latest list of new entries at the medical schools in London for the session 1893–94 in the order of precedence: Guy's 238, St. Mary's 164, University College 164, the London 157, St. Bartholomew's 156, King's College 119, St. Thomas's 94, Middlesex 69, Charing Cross 58, Westminster 36, St. George's 27. At the provincial schools the following entries have been returned: Owens College 261, Durham 176, Cambridge 132, Mason College 94, Yorkshire College 68, Bristol Medical School 36, Sheffield Medical School 14.

The Chicago Clinical Review has inaugurated a new department in the current number. That is a list of titles of the original articles and leading editorials that have appeared in the medical periodicals of the month.

THE LIBRARY TABLE.

BOOK REVIEWS.

A System of Genito-Urinary Diseases, Syphilolgy and Dermatology. By various authors. Edited by Prince A. Morrow, A. M. M. D. Clinical Professor of Genito-Urinary Diseases, formerly Lecturer on Dermatology in the University of the City of New York; Surgeon to Charity Hospital, etc; with illustrations. In three volumes. Vol I, Genito-Urinary Diseases. New York: D. Appleton & Co., 1893.

One of the first things that strikes the reviewer is that the articles are written by men whose opinions are of value, and that what they have said they have said well. The articles represent the latest thought on the various subjects and are not, as is too often the case, merely a job lot of old essays long since out of date, dignified by the name of "system." Care has been taken by the editor that each author should keep strictly to the limits assigned to him, and as a result there is little of that overlapping of articles so common in works of this kind.

Not the least of the many attractions of the book is the press work of which the publishers may well feel proud. Good paper, clear type and sharp illustrations render the volume pleasing to the eye and add to its usefulness. Especially beautiful are the colored plates, several of which are scattered thoroughout the book.

The work is the result of the labor of thirty-two contributors. Dr. George Woolsey describes the Anatomy and Physiology of the Genito-Urinary Organs in a carefully written and well illustrated article. To Dr. Ramon Guiteras has been assigned the duty of contributing the article on Diseases of the Penis, while the section on Diseases and Injuries of the Urethra is from the pen of Dr. F. Tilden Brown. Both articles are concise, well written and amply illustrated. The subject of Urethritis is divided into three chapters, Dr. S. Lustgarten discussing the Etiology of the disease in a scholarly manner. The various micro-organisms found in the urethra as well as the true gonococcus of Neisser are fully described and the various methods of staining and culture discussed. The various urethral discharges other than gonorrhœal receive brief mention. Dr. George Emerson Brewer contributes the chapter on Acute Urethritis, while that on Chronic Gonorrhoea is from the master hand of Dr. William K. Otis. Stricture of the Urethra is handled by Dr. J. William White in his usual clear and decisive manner. Especially fine is the article on Stone in the Bladder by Dr. Arthur T. Cabot. The various operations are carefully and clearly described as well as the older methods of dissolving the calculus by medicinal agents. Dr. Morrow, beside his work as editor, has found time to contribute an interesting and valuable article on the Functional Disorders of the Male Sexual Organs. Varicocele is ably dealt with by Dr. Edward L. Keyes, and the chapter on Gonorrhœa in the Female is furnished by Dr. Andrew F. Currier. The remaining articles in the volume are by men equally capable and the whole work is one that American authors and physicians may well be proud of.

In the volume there is little for the critic to carp at. Dr. Otis advocates dilatation of the urethra in gleet so soon as the subacute stage occurs and advises incision of the meatus in order to accomplish this. The operation has been condemned by many on account of the flaccid condition of the meatus which results and the often uselessness of the procedure. Gonorrhœal Rheumatism is still left by Dr. Frank Hartly as an reproach to medicine so far as the treatment by drugs is concerned. Dr. Wyeth, in his article on Hydrocele, advocates the old treatment of tapping and injecting of the sac, making no mention of the more modern method of incision and packing. Again, Dr. Keyes, in speaking of the open treatment of Varicocele, says "I consider it obsolete and shall not describe it." In view of the fact that many surgeons still employ this method, it seems as if it would have been better had he at least described the operation.

The editor has stated in the preface that "The articles are all of the most practical character and appeal directly to the needs of the general practitioner, to whom they will be found to be of the greatest value; as they are epitomes of all that is known on the respective subjects up to the date of the issue of the work," and the implied promise is fully kept.

If the same high standard is maintained in the remaining volumes on Syphilology and Dermatology, the general practitioner and specialist alike will find the work invaluable.

The Medical News Visiting List for 1894. Weekly, dated, for 30 patients); Monthly (undated, for 120 patients per month); Perpetual (undated, for 30 patients weekly per year); and Perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 176 pages of blanks. The 60-Patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, pocket, pencil, rubber, and catheter-scale, etc. Seal Grain Leather, $1.25. Philadelphia: Lea Brothers & Co., 1893.

This *Visiting List* for 1894, has been thoroughly revised and brought up to date. The text portion contains useful data for the physician, including an alphabetical Table of Diseases, with the most approved Remedies, and a Table of Doses. It also contains sections on Examination of Urine, Artificial Respiration, Incompatibles, Poisons and Antidotes, Diagnostic Table of Eruptive Fevers and the Ligation of Arteries. The classified blanks are arranged to hold records

of all kinds of professional work, with memoranda and accounts. Four styles are now published: Weekly (dated, for 30 patients); Monthly (undated, for 120 patients per month, and good for any year); Perpetual (undated, for 30 patients weekly per year); and Perpetual (undated, for 60 patients weekly per year). This last style consists of 256 pages of assorted record blanks, without text. Each style is in one volume, bound in handsome red leather, with pocket, pencil, rubber, and catheter-scale, price, $1.25. When desired, a Ready Reference Thumb-letter Index is furnished at an additional cost of 25 cents.

Duane's Students' Dictionary of Medicine. The Students' Dictionary of Medicine and the Allied Sciences. Comprising the Pronunciation, Derivation and Full Explanation of Medical Terms, together with much collateral descriptive matter, numerous tables, etc. By Alexander Duane, M. D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Reviser of Medical Terms for Webster's International Dictionary. In one square octavo volume of 658 pages. Cloth, $4.25; half leather; $4.50; full sheep, $5.00. Philadelphia, Lea Brothers & Co., 1893.

This work is the result of the painstaking labor of an author abundantly qualified for the difficult task. The volume is one of merit, and will compell recognition as a standard medical dictionary for students.

Dr. Duane's experience and scholarship are sufficiently attested by his position as Reviser of Medical Terms for *Webster's International Dictionary*. In the present work he has undertaken to provide medical students with full information concerning every word they will meet in acquiring their professional education. The vocabulary is liberal, and its fulness is paralleled by the treatment accorded to each word. The definitions are of the "explanatory" style, including not only a statement of meaning, but likewise much descriptive matter under headings which would be inadequately represented by a definition however full. Thus, under diseases are given causation, symptoms and treatment; under important organs, outlines of structure and functions; under drugs, actions, uses and preparations, the information being arranged so as to give a rational and connected idea of the subject. Extensive tables of bacteria, muscles, arteries, veins, nerves, etc., are included. Each word is followed by its correct pronunciation given by means of a simple and obvious phonetic spelling. Derivation, an unexcelled aid to remembrance of meanings, is likewise fully and clearly stated, Greek letters being replaced with those of the English alphabet, for the convenience of those unfamiliar with Greek. The type has been carefully selected for legibility, and each page contains an extraordinary amount of matter.

Sonsino, P.—Sviluppo, ciclo vitale e ospite intermedio della Bilharzia haematobia. (Proc. verb. della Soc. Tosc. di scienze nat. addun. di 11 agosto 1893. 1 p)

(The life history of *Bilharzia haematobia*.)

Among the flukes which are found in the human body there is one species which is particularly interesting from several points of view. It is interesting to the physician because it is one of the most injurious parasites found in man. It lives in the veins and causes the disease known in Egypt and various other countries where it occurs, as Bilharziosis. It is of special interest to the zoologist because it is the only fluke found in man in which the sexes are separate. *Fasiola hepatica*, *Distoma sinense*, *Distoma lanceolatum* and the others all being hermaphrodites.

For some years zoologists have speculated and experimented upon the life-history of this parasite. Cobbold attempted to inject various mollusca, crustaceans and insects with the embryonic stage. Harley thought this species might develop without any intermediate host and attempted to infect dogs and cats by feeding the ciliated embryos to them, but his results were negative. Sonsino then experimented with various mollusca and insects but did not succeed in solving the question of the life-history of the parasite. This last summer, Sonsino again experimented with the parasite, and this time seemingly with better success. His results may be summed up as follows:

The life-history of *Bilharzia hæmatobia* is quite different from that of other trematodes.

It consists of a metamorphosis with change of host but without alteration of generations. The intermediate host is a small crustacean. The miracidium (embryo) of *Bilharzia* bores into the crustacean, loses its cilia and becomes encysted. When the crustacean is swallowed in the unfiltered drinking water by persons, the parasite is freed from its cyst, bores its way to the portal vein and completes its development to the adult stage.

A similar parasite (*bilharzia crassa*) occurs in cattle.

The Use of Mono-Bromide of Camphor in Vertigo Epilepsy.

Dr. Bourneville (*Le Progres Medical*) has used this remeay for twenty years in the treatment of epilepsy when vertigo is a frequent complication. Five cases are reported showing the results of administration. The daily dosage is from three to seven capsules, each containing three grams of the remedy. Each week the daily dose is increased by one capsule until the maximum is reached, when the treatment is omitted for a week, to be resumed in the form of a daily dose of three capsules.

Salicylate of Soda per rectum.

In all cases where salicylate of soda disagrees with the stomach, it be administered per rectum without any difficulty. In the clinic at Munich, after an evacuating enema, the following mixture is injected pretty high up in the bowel: one and one-half to two drachms of solicylate of soda; water, three ounces, and a pretty large dose of tr. opii to prevent irritation of the bowel.

CURRENT LITERATURE REVIEWED.

IN CHARGE OF ELLISTON J. MORRIS, M. D.

THE EDINBURG MEDICAL JOURNAL for November contains a continued article on

The Disorders of Speech,

by Dr. John Wyllie. In speaking of motor aphasia and quoting Trousseau, he says: "The greater number of aphasics are paralyzed in the right hand and cannot write; and if they acquire the habit of writing with the left hand, it is easy to see that they cannot trace, in writing, many more words than they can express in speech." In some cases, however, patients presenting typically the symptoms of motor aphasia in their speech, can yet express themselves correctly in writing. In these cases it is believed that the lesion is not cortical, but sub-cortical; and that it is so situated as to cut across the pathways leading to the organs of phonation and articulation, whilst it leaves intact the pathways connecting the motor speech centres with the centres for writing. The author thinks it far from certain that this exceptional retention of the power of writing is to be always so explained, and asks if it is not possible that the patient was markedly *auditif*, and that his vivid auditory word images were in themselves sufficiently potent to call up the equivalent visual and motor images in the writing centre. The reception and interpretation of audible speech are little, if at all, interfered with; but in the majority of cases, there is an interference with the power of reading.

When motor aphasia is complete, the power of repeating or echoing spoken words is of course destroyed as completely as is the power of volitional or spontaneous utterance. In both cases, the power of utterance would be lost permanently were it not for the further education of the convolution on the other side of the brain.

As to copying of written or printed words, it is not materially interfered with.

Other phenomena associated with it are amimia and paramimia and also sometimes an inability to protrude the tongue by effort of the will.

In training a patient with motor aphasia to speak, it is often of advantage to him to pronounce simple words in his hearing and ask him to repeat them. Let him master the letter sounds first. In this way, in many cases the patient re-acquires the power of speech.

Quoting Wernicke, the author says of conduction aphasia, "The patient understands everything, he can also say everything, but the choice of the right words is disturbed.

The autopsy on a case of this kind revealed the chief lesion to be a softening with depression in the island of Reil and the floor of the sylvian fissure.

Dr. A. G. Miller reports a

Case of Facial Neuralgia Treated by Operation.

The neuralgia originated in the stump of a molar of the upper jaw, the pain was typically explosive and manifested itself mainly in the infra-orbital nerve although the other divisions of the fifth nerve were affected. At the first operation he cut down over the infra-orbital foramen and stretched the nerve. This relieved his patient for a time but the trouble returning he cut down and exposed the infra-orbital foramen and nerve, opening into the antrum without opening the mucous membrane, breaking up the lower wall of the infra-orbital canal, and drawing out the nerves, which gave way. The end was then cauterized with a small wire.

After even this more radical operation some trace of the trouble returned and the author believes that any operation, however radical, is only palliative at the best.

Chemical Examination of the Contents of the Healthy Stomach,

by Alex. L. Gillespie. The conclusions he draws are as follows:

1. Free Hcl. is secreted by the stomach glands from the moment at which food enters the viscus.

2. First stage of gastric digestion, during which no free Hcl. is present, but the total acidity constantly rises.

3. Free Hcl. appears in the stomach contents between the first half hour to the second or third hour.

4. Second stage of gastric digestion, both free and combined Hcl. present. Acidity rising.

5. Third stage, both free and combined Hcl. present. Total acidity falling.

6. The acidity during the earlier part of the first stage is so small that it can probably allow the amylolytic action of the saliva to 9 per cent. on for a short time.

7. The free Hcl. secreted at first combines at once with the proteids in the food.

8. Hcl. originally combined is less antiseptic than pure Hcl.

9. The total solids, both of the filtered and unfiltered contents, fall per cent. from the commencement.

10. The total acidity is lower in the filtered contents; the combined is generally higher, the free lower, than in the unfiltered.

11. The inorganic salts diminish per cent. from the commencement.

12. There is generally an excess of fixed chlorides at the beginning of digestion.

13. The total proteids per cent. in solution fall during digestion.

14. Albumen, probably nucin, increases per cent.; albumosis remain stationary, while the peptones diminish largely per cent.

15. The Micro-organisms are present in large numbers at the beginning of digestion; the numbers diminish as digestion goes on.

16. The stomach contents have no further digestive power unless there be some free Hcl. present.

17. The free Hcl is seldom over .09 per cent. at any hour after a proteid meal. It may

rise to .162 or .27 after a meal chiefly carbohydrate in character.

18. Hcl combined to proteids does not cause heartburn, at least to any appreciable extent, but both free Hcl. and free organic acids do so, the latter especially.

19. The pain which comes on immediately after food has been taken is probably due to the presence of an ulcer, or of erosions or is neurotic in origin. Coming on at the time when free Hcl should appear in the contents, this acid is probably the offender.

If accompanied with flatulence and heartburn, and occuring at variable times after taking food, the author would suspect some fermentation, and, if carbohydrates are badly borne, diminution in the secretion of Hcl. as well.

Deficiency of Hcl. is easily remedied for a time by the administration of some acid by the mouth. Hyperacidity is difficult to treat, and the other organs should be carefully looked into. The diet should be non-irritating.

When the stomach is dilated or the seat of a chronic gastritis, regular lavage gives good results. In gastric ulcer, treat the hyperacidity and if the patient be fed by the bowel, the administration of a little grated meat or albumen water by the mouth will often allay the pain. He believes washing out the stomach in ulcer is followed by relief.

Dr. N. T. Brewis has an interesting article on

Patrotitis following operations on the Abdomino-Pelvic Organs.

He reports a case in which an ovariotomy was followed on the fifth day by swelling in the parotid region. The gland was opened and drainage practiced and the patient made a good recovery.

He thinks we may regard the parotitis which comes on after operation on the sexual and abdominal organs as the result of a reverse sympathy. That cases which run through a course like mumps, ending in resolution, are due to this nerve connection alone; but that those cases which suppurate while sharing the sympathetic relation, must, from the number of fatal results which occur, be regarded as involved in septic intoxication. In suppurative cases which do not terminate fatally he considers that the septicæmia has exploded in the parotid gland.

What is the Best Treatment of Diphtheria

by Dr. Keith Forman MacDonald. He considers that the success we obtain in treating this disease largely depends upon how well our directions are carried out, and how the remedies are used. He relies mainly on the following, when the case is a mild one: an aperient, hot fomentations to the throat, the steam of hot water and the spray of lactic acid and lime water or sulphurous acid and water, a chlorate of potash drink, and a diet of milk and beef tea. When the case is at all severe he gives iron and quinine internally 15 to 20 minims of the tincture of the perchloride and 1 to 5 grains of quinine every four hours. Locally he applys a solution of equal parts of the tincture of the perchloride of iron and glycerine every four hours, at the same time he uses the lactic acid and sulphurous acid spray alternately several times a day For disinfecting the room and articles of clothing he uses carbolic acid, chloride of lime, Condys fluid and fuming sulphor.

The remaing papers in this issue are "The Etiology of Ectopic Gestation" by Dr. J. C. Webster. "Studies in Fœtal Pathology and Teratology," by Dr. J.W. Ballantyne. "Notes on a Case of Tetanus," by Dr. J. W. Dowden and a continued article on "Varieties of the Appendix Vermiformis, Cæcum, and Ilio-Colic valve in Man," by Dr. John Struthers.

THE AMERICAN JOURNAL OF OBSTETRICS

for November.

This issue of the journal contains four papers on hysterectomy. The first contribution on the subject is by Dr. J. M. Baldy and is entitled

Hysterectomy. Its Indications and Technique.

According to the author, the indications for the operation are:

1. Malignant degenerations of the uterus.
2. Fibroid tumors of the uterus.
3. Pelvic inflammations.
4. Prolapse of the uterus.
5. Inversion of the uterus.

In regard to fibroid tumors, the author is of the opinion that if small and giving rise to no untoward symptoms they should be left unmolested, provided the patient is not exposed by her station in life to attacks of inflammation and is living in such a neighborhood that competent surgical aid can be obtained if necessary. If the patient be within a few years of the menopause it may be advisable to adopt for the time being the expectant line of treatment. Under all conditions a fibroid tumor of the uterus should be subjected to surgical treatment and the author believes that hysterectomy is the proper procedure to adopt. Myomectomy can only be considered where the patient is of such an age as to make it desirable and possible for her to bear children and where the uterine appendages are healthy and capable of performing their function; the reverse of which is true in the majority of fibroids.

In pelvic inflammations, Dr. Baldy believes that hysterectomy should be the operation of choice in all cases in which the uterine walls are infiltrated with pus and the uterus materially enlarged. All cases of prolapsus uteri, in which the usual surgical means have been tried and failed, should be subjected to hysterectomy as a sure means of cure. The operation should always be followed by plastic operations on the anterior and posterior vaginal walls for the repair of the relaxation of the vagina.

The author believes that the combined method of performing hysterectomy is superfluous and more dangerous than either the vaginal or abdominal operation alone. Vaginal hysterectomy by means of the catgut ligature has, in the author's hands, proved the safest and most satisfactory of the vaginal operations.

The author also thinks that, in abdominal hysterectomy, the dropping of the stump back into the pelvic cavity is preferable to the extra-peritoneal method. He is also strongly in favor of the supra-vaginal amputation as against total extirpation. The technique of the operations are described and the various steps illustrated. The author advises the Trendelenberg position in performing abdominal hysterectomy.

The second paper is by Dr. George M. Edebohls on

The Technique of Total Extirpation of the Fibromatous Uterus.

When treatment is called for, the author believes that surgery is invariably to be preferred to any and every other method of therapeusis. The method of operating which the author prefers is as follows: The patient is placed in the lithotomy position and the vagina and uterus carefully disinfected and the uterine cavity and vagina packed with antiseptic gauze. The position of the patient is then changed to the Trendelenburg posture. The tumor is delivered through the abdominal incision and pulled as far as possible out of the pelvis. A transverse incision is made through the peritoneal covering of the anterior and posterior surfaces of the uterus from one broad ligament across to the other. The two peritoneal flaps thus marked out should be large enough to easily cover the defect in the pelvic floor left after the removal of the uterus. The peritoneal flaps are next stripped from the surface of the uterus. In doing this the bladder and ureters are carried forward with the anterior flap well out of the way of harm during the further steps of the operation. The uterine artery on either side is next secured by a subperitoneal mass ligature of stout catgut, carried well down to but not into the vagina. The broad ligaments are tied off by two further catgut ligatures on either side, one embracing the round ligament and the other the infundibulo-pelvic ligament and the spermatic artery. The cutting-out of the uterus, tumor, and appendages in one piece between the ligatures is now an easy and bloodless procedure. The six ligatures are cut short and the knots turned downward toward the vagina and the gap in the pelvic floor closed by uniting the anterior and posterior flaps by means of a transverse, running Lembert suture of catgut, extending from the stump of one infundibulo-pelvic ligament across to that of the other. The peritoneum is dry-cleansed with sterilized gauze, the abdominal wound closed without drainage, and the patient returned to the lithotomy position. The gauze packing is removed from the vagina and replaced by a loose dressing of gauze applied in such a way as to drain the supra-vaginal subperitoneal space.

The author believes the method to possess the following advantages:

1. The danger of infection from the uterus and vagina is entirely avoided, or at least minimized.

2. The uterine arteries are secured with ease and certainty. The distension of the vagina by the gauze packing enables the operator to carry the mass ligature well down to the vagina and to include the supply to the upper end of the vagina as well, so that there will be no bleeding of the vaginal arteries after cutting out the uterus.

3. The operation is practically bloodless. With the exception of the incision through the peritoneum fore and aft, no part is divided until its blood supply has been secured.

4. The danger of wounding the bladder or uterus is reduced to a minimum. These organs are lifted with the anterior peritoneal flap well out of the field of operation.

5. The closure of the peritoneum is as perfect as it can be made, its *status qu ante* is restored, and no foreign body is left in its cavity.

6. The after-treatment required is practically *nil*. The patients have generally left bed at the end of two, and hospital at the end of three weeks.

The third paper is by Dr. E. E. Montgomery and deals with

Vaginal Hysterectomy.

The author points out clearly the indications for the operation and the symptoms which should lead the practitioner to look for diseased conditions of the uterus requiring surgical interference. He urges that a thorough examination be made in any suspected case and the operation performed at as early a period as possible, if disease exists. In the preparation of the patient for operation the author urges that the patient be subjected to antiseptic vaginal douches, and that, several days before operation, the vagina should be carefully cleansed with a solution of creolin and tincture of green soap, and the diseased tissue carefully cut away with a sharp curette and scissors, the cavity and vagina irrigated with a hot sublimate douche 1: 2000, dried, and packed with iodoform gauze. Later this packing should be removed, the vagina cleansed and repacked. The latter packing may remain till the time of operation when it should be removed and the cavity and external surfaces carefully cleansed with the creolin and soap solution and finally irrigated with hot sterilized water. The external surfaces should have previously been shaved.

The author prefers the clamp to the ligature in securing the broad ligaments for the following reasons:

1. Its ease of application, enabling the operator to economize valuable time.

2. The greater security against hemorrhage —the ligature, though apparently securely tied, may slip from the stump when the latter shrinks after the removal of the uterus.

3. We have no infected ligature to complicate or delay the subsequent convalescence.

4. By traction upon the clamps we are enabled to carry the gauze tampon above the lacerated surfaces and pen the intestines within the peritoneal-lined cavity, thus affording ready exit for the sloughing tissue devitalized by the pressure of the intruments.

The author reports twenty-one operations performed with twenty-one recoveries and concludes from this showing that the operation certainly cannot be a very dangerous one.

The fourth paper is by Dr. Joseph Price on

The Extra-peritoneal Treatment of the Stump in Supra-vaginal Hysterectomy.

In this paper the author makes an urgent plea for the use of the nœud in hysterectomy. The objections to its use are carefully considered and answered. He declares that a proper pedicle can always be made and the operator who cannot do so is not competent to perform the operation. He condemns the use of multiple ligatures in the pelvic cavity as adding to the gravity of the operation. He affirms that the nœud should never slip and that the bowel should never be included in its grasp and also that by care the bladder and ureters ought never to be involved. He is convinced that if for any reason it is concluded that the nœud cannot be, complete extirpation is likely to be the safest resort and therefore the one to be selected. Results and statistics are wholly in favor of the extra— and supraperitoneal operation and clean extirpation. The latter procedure he does not oppose, having performed it successfully, but he considers that the risks are greater than in the old and established procedure.

[Judging by Dr. Price's statistics, the operation by means of the nœud in his hands is a most satisfactory procedure however far it may fall short of being an ideal one.—ED.]

Dr. Henry J. Garrigues contributes a paper on

Symphysiotomy.

The space gained, the limits and indications as well as the technique of the operation are all carefully considered by the author in the paper. He regards the subcutaneous incision as the best and would resort to the open method only in case of uncontrollable hemorrhage, if the repairs of injuries demand it, or the symphsis cannot be cut. The suturing of the ends of the bones with silver sutures he regards as superfluous and an unnecessary complication of the operation. The soft parts, skin and adispose tisspe should under all circumstances be united by deep and superficial silk sutures, which are left in for a week or ten days. Drainage he considers to be superfluous. In order to keep the two halves of the pelvis together nothing is better than rubber adhesive paster. While the straps of adhesive plaster are being applied, and during after-treatment, the patient should lie with outstretched legs, the knees together, and the feet turned inward, as this position of itself approximates the ends of the bones

In regard to maternal injuries, the author believes that the protection of the vagina with a vectis-like instrument, as proposed by H. W. Freund, is not practicable. The placing of the hand between the bones, as recommended by Schauta, seems to the author to be more likely to increase the tension than to lessen it. The chief thing, he believes, is to extract very slowly and in the right direction. If injuries occur they should be repaired immediately with silk or catgut sutures. If there is a tear in the bladder it should be closed with continuous tier catgut sutures, one applied to the mucous membrane the other to the muscular coat and the peritoneum.

In regard to the relation of symphysiotomy to other obstetric operations. Cranotomy on the living child, or what is worse, expectation till the child is dead, followed by craniotomy, ought never to be thought of in any community in which it is possible to obtain the assistance of a man capable of performing symphysiotomy. As to the induction of premature labor, in cases in which the mother's life is to be preferred, induction of premature labor retains its position; but in others, in which the life of the child is of particular importance, symphysiotomy is to be preferred, the infant mortality being only about half as large as in the other operation. In regard to its relation to Cæsarean section, the author concludes, after reviewing the statistics, that with proper regard for the life of the mother there can be no hesitation in regard to the preferability of symphysiotomy. The operation competes with the Porro operation, as it has been safely performed after the woman has been many days in labor. Any form of Cæsarian section ought therefore, to be confined to the cases in which the coarctation goes beyond the limits for symphysiotomy. Even difficult forceps and version operations ought to be replaced by symphysiotomy, and if the child were unusually large the operation would be indicated even with a normal pelvis.

In the author's opinion symphysiotomy is a valuable addition to obstetrical resorrces, which ought to be performed frequently in maternities and in private specialist practice.

Dr. A. W. Abbott contributes a paper on

The Co-ordination of the Muscles Closing the Urethra Vagina and Rectum, and its Application to the Precise Diagnosis and the Surgical Treatment of Injuries to the Pelvic Floor.

The author gives the following rule for ascertaining what muscle or muscles of the perineum are torn. The patient is placed in the lithotomy position with the perineum exposed. If the patient alternately contracts and relaxes the sphincter ani, all the other muscles involved contracting and relaxing at the same instant, it will be immediately apparent, by touching the normal positions of the various muscles, which ones contract throughout their full extent and are therefore intact, and those that are torn by the partial or total loss of contractile hardening at the point of rupture. The exact site of injury may often be made out by sight alone, the sound side drawing up, while the tissues of the injured side are carried toward the uninjured side instead of counteracting the effect of the latter as they normally should. Having definitely located the injury, the technique of the operation is simple. Incise the mucosa and dissect down to the torn ends of the muscle. Place stitches so as to draw the ends of the muscle together. If the rupture involves only the transversus perinei

a small transverse incision will suffice. If the pubic part of the levator ani is ruptured the incision should be in the sulcus and the dissection carried down to the plane of the levator, in some cases as far as the posterior plane of the rectum, and the muscles exposed and drawn up with catch forceps; tendon or well-chromicized catgut should then be passed so as to get a deep and secure hold upon the muscles. It is usually necessary to dissect up the outside mucosa and fascia, so as to get as good a point as possible for the new insertion of the muscle. Should it be necessary, the operation may be completed by Emmet's operation.

Dr. Edward W. Jenks discusses the subject of

Perineo-vaginal Restoration.

Four important ends are to be attained in repairing the class of injuries under consideration: 1. To restore the loss of power and function to the lower portion of the rectum and vagina. 2. To restore the normal sustaining quality of the posterior vaginal wall for the anterior vaginal wall and bladder. 3. To provide as much support for the uterus as the perineum naturally gives. 4. To cure the many distressing nervous accompaniments. The operation he advocates is of the flap-splitting variety, or submucous dissections, advocated by Mr. Tait. For suturing material he prefers silkworm gut, which possesses the principal advantages of silver wire and is not so unyielding. The author especially directs attention to the following points:

1. Any single mode of operating is not adapted to every case of laceration of the perineum.

2. All other qualifications being equal, that surgeon will be the most successful in this class of operations who, instead of following hard-and-fast rules, possesses a mechanical skill which he can adapt to the peculiarities of each individual case.

3. The subsequent comfort of the patients is not facilitated by the superabundance of cicatricial tissue within the vagina; therefore the anterior wall, instead of being subjected to any surgical procedure for redundancy, should be sustained by a restoration of the normal posterior wall.

4. The surgical operation advocated by the author has for its object a restoration of the torn posterior vaginal wall and perineum to their normal condition and functions, whereby there is afforded (a) support for the uterus to the full extent provided for in the vaginal walls; (b) support for the anterior vaginal wall and bladder; (c) support for the lower end of the rectum.

The article is illustrated by wood-cuts showing the various steps of operation advocated by the author.

Dr. Hugh Hamilton describes "The Application of Graphics to the Fœtal Heart Sounds," by means of an instrument on the principle of the telephone but so designed as to record the tracings of the maternal and fœtal heart sounds on blackened paper by which means they can be differentiated and compared. The article is illustrated by a cut of the instrument referred to, showing its application.

The remaining papers in this months issue are: "Recent Surgical Advances and their Relation to Conservative Obstetrics," by Dr. W. Reynolds Wilson; "The Pathology and Treatment of Puerperal Infection," by Dr. Edward A. Ayers; "Exophthalmic Goitre," by Dr. Edmund Lee Tompkins; "Two cases of Phlegmasia Dolens," by Dr. J. T. Winter; and the "Inaugural Address before the Section on Obstetrics of the First Pan-American Medical Congress," by Dr. Giles S. Mitchell.

Plaster of Paris as a Means of Filling Defects in Bone.

Dr. H. Dreesmann in eight cases has filled cavities in bone, of small size, with Plaster of Paris, closing the soft parts over it and succeeded in healing six without fistula. The plaster was mixed with a 1 in 20 carbolic acid solution. The bone cavities after thorough mechanical removal of infected tissue were filled with olive oil and the latter heated by plunging into it the tip of the thermocautery. The practical advantages of the method over decalcified bone implantation seem doubtful, although the earliest cases remained well when last seen six months after operation.—(*Ueber. Knochenplombierung, Dr. H. Dressmann, Beitrage zur Klin. Chirurge* ix, 1893, p. 804.)

Of Interest to Travelers.

The Baltimore and Ohio Railroad announces that they have placed on sale round trip tickets at reduced rates to the Winter Resorts in Florida and the South, and also to such points of interest as Luray, Natural Bridge and Gettysburg. This company has also arranged to place on sale excursion tickets to San Francisco and other points in California on account of the Mid-Winter Fair, at unusually low rates. Excursion tickets are now on sale to Baltimore and Washington via the famous Royal Blue Line.

With its vestibuled train service via Washington to Cincinnati, St. Louis and Chicago, the B. &. O. is in the best of condition to handle western and southern travel. That the line is a popular one, is attested by the immense World's Fair business handled this summer.

Those contemplating a trip west or south this winter, should write to James Potter, Div. Pass. Agent, B. & O. R. R., 833 Chestnut St., Philadelphia, Pa., for rates and other information.